

# Medical TIMES

THE JOURNAL OF GENERAL PRACTICE

Alcoholism

Urinary Symptoms in the Elderly Male

Carcinoma of the Endometrium

Accident or Injury

Mass Chest X-Ray Surveys

University of Chicago Clinics

Investing

Forecast for 1958

Portfolio Yielding \$25 per week

Questions and Answers

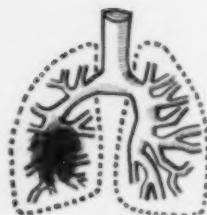
NO. 1

JANUARY, 1958

YOL. 64



*For the complications  
of Asian flu*



## GANTRICILLIN

*provides Gantrisin plus penicillin  
in a single tablet....*



*for control of both gram-positive  
and gram-negative secondary  
invaders.*

**Gantricillin 300** for potent therapy

**Gantricillin Acetyl 200** suspension for  
pediatric use

**Gantricillin 100** for mild infections

Gantricillin®; Gantrisin®-brand of sulfisoxazole

ROCHE LABORATORIES  
DIVISION OF HOFFMANN-LA ROCHE INC  
Nutley 10 • New Jersey

sleep for the sleepless \*



The stroboscopic photo shows movements of restless sleeper (28-year-old male) after placebo. The following night the same patient was given nonbarbiturate Doriden 0.5 Gm. at bedtime. The result was an approximate 50 per cent reduction in overt motion and restlessness. Doriden® (glutethimide CIBA) acts within 15 to 30 minutes; induces 4 to 8 hours of sound, natural sleep; rarely causes morning hangover. C I B A Summit, N. J.

the chill

the cough

the aching muscles

the fever



*Viral upper respiratory infection. . . .* For this patient, your management will be twofold—prompt symptomatic relief plus the prevention and treatment of bacterial complications. PEN-VEE-Cidin backs your attack by broad, multiple action. It relieves aches and pains, and reduces fever. It counters depression and fatigue. It alleviates cough. It calms the emotional unrest. And it dependably combats bacterial invasion because it is the only preparation of its kind to contain penicillin V.



This advertisement conforms to the Code for Advertising of the Physicians' Council for Interim Protection of Children's Health.

# PEN-VEE-Cidin

Penicillin V with Salicylamide, Promethazine Hydrochloride, Phenacetin, and Mephentermine Sulfate, Wyeth

SUPPLIED: Capsules, bottles of 36. Each capsule contains 62.5 mg. (100,000 units) of penicillin V, 194 mg. of salicylamide, 6.25 mg. of promethazine hydrochloride, 130 mg. of phenacetin, and 3 mg. of mephentermine sulfate.



©  
Philadelphia 1, Pa.

# CONTENTS

<b>Features</b>		
	1	Management of Alcoholism in General Practice Ebbe Curtis Hoff, Ph.D., M.D. Charles E. McKeown, M.D.
	9	Lupus Erythematosus Edmund L. Dubois, M.D.
	20	Urinary Symptoms in the Elderly Male William S. Jasper, Sr., M.D.
	27	Role of Radiotherapy in Carcinoma of the Endometrium Howard B. Hunt, M.D.
	35	Accident or Injury Donald C. Durman, M.D., F.A.C.S.
	39	Acute Pericarditis Norman W. Keller, M.D.
<b>Conference</b>	54	Clinico-Pathological Conference University of Chicago Clinics
<b>Editorials</b>	57	Dr. Arthur C. Jacobson Reactions Following the Administration of Antibiotics Medical Ethics and Etiquette Doctors Should Think Twice

**BPA**

Opinions expressed in  
articles are those of the  
authors and do not  
necessarily reflect the  
opinion of the editors or  
the Journal.

Medical Times is published monthly by Romaine Pierson Publishers, Inc., with  
publication offices at 34 North Crystal Street, East Stroudsburg, Pa. Executive,  
advertising and editorial offices at 1447 Northern Boulevard, Manhasset, L. I., N. Y.  
Accepted as controlled circulation publication at East Stroudsburg, Pa. Postmaster:  
If undelivered, please send form 3579 to Medical Times, 1447 Northern Boulevard,  
Manhasset, Long Island, New York.



## *in arthritis, BUFFERIN® because . . .*

... in the majority of your arthritic cases BUFFERIN alone can safely and effectively provide adequate therapeutic control without resorting to the more dangerous cortisone-like drugs.

... BUFFERIN is better tolerated by the stomach than aspirin, especially among arthritics where a high dosage, long term salicylate regimen is indicated.

... BUFFERIN provides more rapid and more uniform absorption of salicylate than enteric-coated aspirin.

... even in the relatively few cases where steroids are necessary, use of BUFFERIN will allow proper flexibility for individual dosages.

... BUFFERIN is more economical for the arthritic who requires a long period of medication.

... BUFFERIN contains no sodium, thus massive doses can be safely given without fear of sodium accumulation or edema.

*Each sodium-free BUFFERIN tablet contains acetylsalicylic acid 5 grains, and the antacids magnesium carbonate and aluminum glycinate.*

**Bristol-Myers Company, 19 West 50 Street, New York 20, New York**



# CONTENTS

**Editor's Excerpts** 62 The Long and Short of It

**Therapeutics** 68 Current Status of the Medical Treatment of Peptic Ulcer  
E. Clinton Texter, Jr., M.D.  
81 Cobalt-Iron Therapy in the Treatment and Prevention of the Anemia of Prematurity  
Fethi Tevetoglu, M.D.  
Kemal Ozkarogoz, M.D.

**AMA Code of Ethics** 88 Medical Ethics and Etiquette

**Office Surgery** 96 Subungual Lesions

**Medical Jurisprudence** 100 Obstetrics, Gynecology and the Law  
George Alexander Friedman, M.D., LL.B., LL.M.

**Hospital Centers** 108 University of Chicago Clinics

**Economics** 116 Hospital Care Paid in Advance  
James E. Bryan  
122 Mass Chest X-Ray Surveys and the Attending Physician  
Hyman S. Abrams, M.D.



**your patients with generalized gastrointestinal complaints need the comprehensive benefits of**

# Tridal®

(DACTIL® + PIPTAL® - in one tablet)

rapid, prolonged relief throughout the G.I. tract  
with unusual freedom from antispasmodic  
and anticholinergic side effects



One tablet two or three times a day and one at bedtime. Each TRIDAL tablet contains 50 mg. of Dactil, the only brand of N-ethyl-3-piperidyl diphénylacetate hydrochloride, and 5 mg. of Piptal, the only brand of N-ethyl-3-piperidyl-benzoate methobromide.

14387

# CONTENTS

## Departments

- 19a Off the Record
- 29a Diagnosis, Please!
- 35a What's Your Verdict?  
(Unusual medio-legal cases)
- 41a Coroner's Corner
- 49a After Hours (Doctor's Hobbies)
- 53a Medical Teasers (Crossword puzzle)
- 59a Who is This Doctor?
- 65a Letters to the Editor
- 69a Mediquiz
- 84a Modern Medicinals
- 121a Medical Book News
- 128a Modern Therapeutics (Abstracts)
- 164a News and Notes

## Investments

- 95a The 1958 Outlook
- An Appraisal of the Stock Market
- Warrants for Speculation
- How Far and How Long?
- Hutton's Missile Average
- Glamour for Potatoes
- Growth in Drug Industry
- Picture a Minute
- Public Prefers Blue Chips
- Funds' Stake in Metal and Mining
- Boston Fund a Seller of Equities
- Bright X-Rays
- For Those Seeking Income
- Some Have Passed Their Lows
- Portfolio Yielding \$25 Weekly
- Questions and Answers

# PSORIASIS



*Proved Clinically Effective Oral Therapy —  
maintenance regimen may keep patients lesion-free.*

COMPLETE LITERATURE AND REPRINTS  
UPON REQUEST. JUST SEND AN Rx BLANK.

# LIPAN®

LIPAN Capsules contain: Specially prepared highly activated, desiccated and defatted whole Pancreas; Thiamin HCl, 1.5 mg. Vitamin D, 500 I.U.

Available: Bottles 180's, 500's.

**Spi<sup>r</sup>t & Co., Inc.**  
WATERSURY, CONN.

# Medical TIMES

**PERRIN H. LONG, M.D.**

Chairman, Dept. of Medicine, College of Medicine at N. Y. C., State University of New York. Chief Dept. of Medicine, Kings County Hospital, Brooklyn, N. Y.

**Editor-in-Chief**

**ARTHUR C. JACOBSON, M.D.**

**Editor-in-Chief Emeritus**

**PHILIP A. EMERSON, M.D.**

**Asst. Editor**

**SALVATORE R. CUTOLO, M.D.**

**Asst. Editor**

**PHILIP C. JOHNSON**

**Art Editor**

Asst. Professor of Surgery  
(Medical Illustrator), Dept. of Post-Graduate  
Surgery, N. Y. U.-Bellevue Medical Center

**GILL FOX**

**Asst. Art Editor**

**ALEX KOTZKY**

**Asst. Art Editor**

**C. NORMAN STABLER**

**Financial Editor**

**JOHN F. PEARSON**

**Travel Editor**

**KATHERINE M. CANAVAN**

**Production Editor**

**JAMES F. McCARTHY**

**Asst. Production Editor**

**CONTRIBUTIONS** Exclusive Publication: Articles are accepted for publication with the understanding that they are contributed solely to this publication, are of practical value to the general practitioner and do not contain references to drugs, synthetic or otherwise, except under the following conditions: 1. The chemical and not the trade name must be used, provided that no obscurity results and scientific purpose is not badly served. 2. The substance must not stand disapproved in the American Medical Association's annual publication, *New and Nonofficial Remedies*. When possible, two copies of manuscript should be submitted. Drawings or photographs are especially desired and the publishers will have half tones or line cuts made without expense to the authors. Reprints will be supplied authors below cost.

**MEDICAL TIMES** Contents copyrighted 1958 by Romaine Pierson Publishers, Inc. Permission for reproduction of any editorial content must be in writing from an officer of the corporation. Randolph Morando, Business Manager and Secretary; William Leslie, 1st Vice President and Advertising Manager; Roger Mullaney, 2nd Vice President and Ass't Advertising Manager; Walter J. Biggs, Sales and Advertising. West Coast Representatives: Ron Averill Co., 232 North Lake Avenue, Pasadena, California. Published at East Stroudsburg, Pa., with executive and editorial offices at 1447 Northern Boulevard, Manhasset, N. Y. Book review and exchange department, 1313 Bedford Ave., Brooklyn, N. Y. Subscription rate \$10.00 per year. Notify publisher promptly of change of address.

help reduce  
the pressures  
**IN** your  
patients

help reduce  
the pressures  
**ON** your  
patients

for total management  
of your hypertensive  
patients rely upon

# RAUDIXIN

Squibb Whole Root Rauwolfia Serpentina

Raudixin provides gradual, sustained lowering of blood pressure in hypertensive patients, as well as a mild bradycardia. Hence, the work load of the heart is reduced.

*"... often preferred to reserpine in private practice because of the additional activity of the whole root."*

Corrin, K. M.: Am. Pract. & Dig. Treatment 8:721 (May) 1967.

Tranquilizing Raudixin helps relax the anxious hypertensive patient so that he is better able to cope with external pressures without being overwhelmed by them. By reducing these anxieties and tensions, Raudixin helps break the mental tension-hypertension cycle.

**Dosage:** Two 100 mg. tablets once daily; may be adjusted within range of 50 to 300 mg.  
**Supply:** 50 and 100 mg. tablets. Bottles of 100, 1000 and 5000.

*Squibb Quality—the Priceless Ingredient*

**SQUIBB**

\*RAUDIXIN® IS A SQUIBB TRADEMARK



# BOARD OF ASSOCIATE EDITORS

---

<b>MATTHEWS</b>	HARVEY B., M.D., F.A.C.S., New Canaan, Conn.
<b>BRANCATO</b>	GEORGE J., M.D., Brooklyn, N. Y.
<b>CUTOLO</b>	SALVATORE R., M.D., New York, N. Y.
<b>McHENRY</b>	L. CHESTER, M.D., F.A.C.S., Oklahoma City, Okla.
<b>HARRIS</b>	AUGUSTUS L., M.D., F.A.C.S., Essex, Conn.
<b>BROWN</b>	EARLE G., M.D., Mineola, N. Y.
<b>UTTER</b>	HENRY E., M.D., Providence, R. I.
<b>LLOYD</b>	RALPH I., M.D., F.A.C.S., Brooklyn, N. Y.
<b>MERWARTH</b>	HAROLD R., M.D., F.A.C.P., Brooklyn, N. Y.
<b>HILLMAN</b>	ROBERT W., M.D., Brooklyn, N. Y.
<b>TADROSS</b>	VICTOR A., M.D., Brooklyn, N. Y.
<b>MAZZOLA</b>	VINCENT P., M.D., D.Sc., F.A.C.S., Brooklyn, N. Y.
<b>HENNINGTON</b>	CHARLES W., B.S., M.D., F.A.C.S., Rochester, N. Y.
<b>GORDON</b>	ALFRED, M.D., F.A.C.P., Philadelphia, Pa.
<b>McGUINNESS</b>	MADGE G. L., M.D., New York, N. Y.
<b>FICARRA</b>	BERNARD J., M.D., F.I.C.S., Roslyn Heights, N. Y.
<b>BROWDER</b>	E. JEFFERSON, M.D., F.A.C.S., Brooklyn, N. Y.
<b>COOKE</b>	WILLARD R., M.D., F.A.C.S., Galveston, Texas
<b>SCHWENKENBERG</b>	ARTHUR J., M.D., Dallas, Texas
<b>GILCREEST</b>	EDGAR L., M.D., F.A.C.S., San Francisco, Calif.
<b>MARSHALL</b>	WALLACE, M.D., Two Rivers, Wisc.
<b>BARRETT</b>	JOHN T., M.D., Providence, R. I.
<b>GRIFFITH</b>	B. HEROLD, M.D., Chicago, Ill.
<b>BAUER</b>	DOROTHY, M.D., Southhold, N. Y.
<b>MARINO</b>	A. W. MARTIN, M.D., F.A.C.S., Brooklyn, N. Y.
<b>POPPET</b>	MAXWELL H., M.D., F.A.C.R., New York, N. Y.
<b>GOODMAN</b>	HERMAN, B.Sc., M.D., New York, N. Y.
<b>HOYT</b>	ELIZABETH K., M.D., Brooklyn, N. Y.

NEW  
 MULTIPLE  
 FORMULA FOR  
 "TOTAL EFFECT"  
 NUTRITIONAL  
 SUPPORT  
**GEVRAL-T**  
HIGH POTENCY VITAMIN AND MINERAL  
 SUPPLEMENT LEADER

CAPSULES



"Total effect" nutritional support with new GEVRAL T frequently produces a dramatic total response in the debilitated patient. A unique, six-formula supplement providing nutritional reinforcement for the entire system, GEVRAL T supplies in each high potency capsule —

**ALL THE FAT-SOLUBLE VITAMINS**  
 including K

**A COMPLETE, HIGH B-COMPLEX  
 COMPONENT**

**A COMPLETE, HEMATINIC SUPPLEMENT** including non-inhibitory intrinsic factor

**AMINO ACID SUPPLEMENT**, l-lysine

**LIPOTROPIC FACTORS, CHOLINE AND  
 INOSITOL**

**12 IMPORTANT MINERALS AND  
 TRACER ELEMENTS**

Your patients get even more nutritional support for their money with economical GEVRAL T . . . supplied in an attractive, on-the-table jar.

*Each capsule contains:*

Vitamin A	25,000 U.S.P. Units
Vitamin D	1,000 U.S.P. Units
Vitamin B <sub>12</sub>	5 mcgm.
Thiamine Mononitrate (B <sub>1</sub> )	10 mg.
Riboflavin (B <sub>2</sub> )	10 mg.
Pyridoxine HCl (B <sub>6</sub> )	2 mg.
Vitamin E (as tocopherol acetates)	5 I. U.
Vitamin K (Menadione)	2 mg.
Ascorbic Acid (C)	150 mg.
Calcium Pantothenate	5 mg.
Niacinamide	100 mg.
Folic Acid	1 mg.
Calcium (as CaHPO <sub>4</sub> )	107 mg.
Phosphorus (as CaHPO <sub>4</sub> )	82 mg.
Iron (as FeSO <sub>4</sub> )	15 mg.
Magnesium (as MgO)	6 mg.
Potassium (as K <sub>2</sub> SO <sub>4</sub> )	5 mg.
Iodine (as KI)	0.15 mg.
Boron (as Na <sub>2</sub> B <sub>10</sub> O <sub>10</sub> ·10H <sub>2</sub> O)	0.1 mg.
Copper (as CuO)	1 mg.
Manganese (as MnO <sub>2</sub> )	1 mg.
Fluorine (as CaF <sub>2</sub> )	0.1 mg.
Zinc (as ZnO)	1.5 mg.
Zinc Ybdenum (as Na <sub>2</sub> MoO <sub>4</sub> ·2H <sub>2</sub> O)	0.2 mg.
Choline Bitartrate	25 mg.
Inositol	25 mg.
l-Lysine Monohydrochloride	25 mg.
Rutin	25 mg.
Purified Intrinsic Factor Concentrate	0.5 mg.

**DOSAGE:** 1 capsule daily for the treatment of vitamin and mineral deficiencies, or more as indicated.

**SUPPLIED:** Bottles of 100 capsules.

LEDERLE LABORATORIES DIVISION, AMERICAN CYANAMID COMPANY, PEARL RIVER, NEW YORK



# NOW

for muscle relaxation plus analgesia

# FLEXILON\*

combines FLEXIN® Zetazolamine,<sup>1</sup> clinically established skeletal muscle relaxant,<sup>2,4</sup> and TYLENOL® Acetaminophen, a superior analgesic for painful musculoskeletal disorders.<sup>5</sup>



**FLEXILON** provides well-tolerated and effective relief of painful muscle spasm associated with low-back syndrome, sprains, strains, fibrosis, and many common rheumatic conditions.

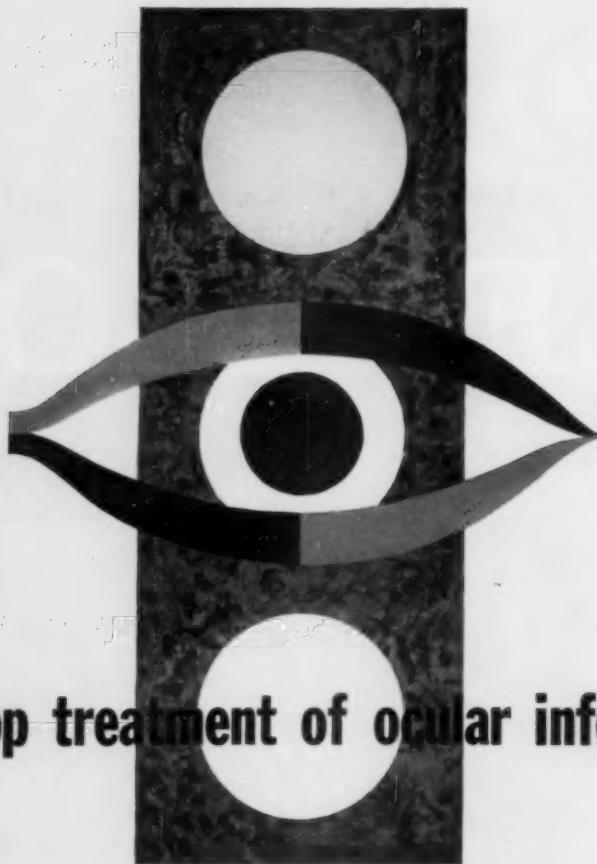
**supplied:** Tablets, enteric coated, orange, bottles of 100. Each tablet contains: FLEXIN Zetazolamine 125 mg. and TYLENOL Acetaminophen 300 mg.

**references:** (1) Reiter, B. D., Ross, K. H., Price, W. H. and Hermann, L. E. J. A. M. A. medical news 21: 2000. (2) Reiter, B.: Am. J. Physiol. 210(1) (March 1961). (3) Reiter, B. C. and Grossman, A. J.: Federation Proc. 24: 618 (March 1965).

**© 1985 McNeil**  
Pharmaceuticals, Inc.

**McNEIL**

McNEIL, LISTERINE, and the McNEIL logo are registered trademarks of McNeil



## One-stop treatment of ocular infections

Biomydrin Ophthalmic offers total relief in a single agent! No longer is there need to rotate several preparations in treatment of ocular infections, allergies and irritations. Biomydrin Ophthalmic gives you all the ingredients needed for effective treatment:

Two antibiotics to fight infection

An antihistamine to relieve itching and burning

A vasoconstrictor to reduce congestion and inflammation

Biomydrin, an isotonic solution containing methylcellulose, is buffered to the pH of tears. Active ingredients: neomycin and gramicidin, Neohetramine®, and phenylephrine HCl. In the new plastic Dropmatic® bottle that releases individual drops of uniform size . . . accurate medication, no squirting!

*Nepera Laboratories, Morris Plains, N. J.*

## BIOMYDRIN® OPHTHALMIC

*for ocular infections, allergies and irritations*



# when you want Broad - Spectrum Benefits . . .

When you want extended antibacterial coverage with high relative safety, consider PEN-VEE SULFAS. Consider how it permits you to reserve the conventional broad-spectrum antibiotics for the resistant infections specifically requiring them. Consider PEN-VEE SULFAS because it unites penicillin V and sulfapyrimidines for potent complementary action. Prescribe it for wide antimicrobial attack in mixed infections and those not readily diagnosed.

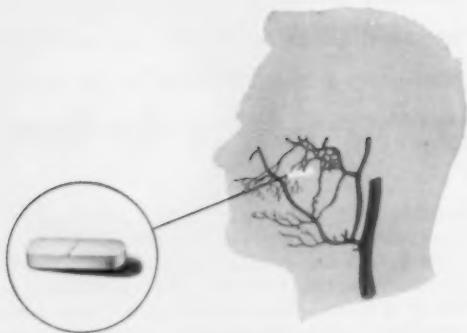
Supplied: PEN-VEE SULFAS Tablets, bottles of 36. Each tablet contains 90 mg. (150,000 units) of penicillin V, 0.25 Gm. of sulfadiazine, and 0.25 Gm. of sulfamerazine. PEN-VEE SULFAS for Suspension, bottles of 2 fl. oz. upon reconstitution. Each 5-cc. teaspoonful after reconstitution contains 90 mg. (150,000 units) of benzathine penicillin V, 0.25 Gm. of sulfadiazine, and 0.25 Gm. of sulfamerazine.



## PEN-VEE® SULFAS

Tablets: Penicillin V (Phenoxyethyl Penicillin) and Sulfonamides  
For Suspension: Benzathine Penicillin V and Sulfonamides

potent oral androgen\*



\*Metandren Linguets take advantage of buccal vascularity for efficient absorption into capillaries and lymphatic vessels. No need to inject androgens. You can prescribe METANDREN® (methyltestosterone U.S.P. CIBA) LINGUETS® (tablets for mucosal absorption CIBA) whenever this hormone is indicated: in males—climacteric, impotence, angina pectoris; in females—menopause, dysmenorrhea, functional uterine bleeding; in both—for anabolic effects in cachectic states and growth failure. Supplied: Linguets, 5 and 10 mg.

C I B A



## Off the Record . . .

### True Stories From Our Readers

Each incident described has been contributed by one of our readers. Contributions describing actual and unusual happenings in your practice are welcome. For obvious reasons only your initials will be published. An imported German apothecary jar will be sent in appreciation for each accepted contribution.

#### Sweet or Dill?

Enclosed please find a statement of claim form to be filled out for the insurance company for the wart removal of my wife—Mildred. Also my wife carries Blue Cross Insurance and would like that form also to be filled out by you.

Thanks for this and past favors.

Yours truly

P.S. Please use the self addressed envelope to send the enclosed report back to me.

E.O.M., M.D.  
Indianapolis, Indiana

#### From the Mouths of Babes

A 1st grade teacher got pregnant and didn't want to teach that year. They could not get any one at the beginning of school for the 2nd grade so she said she would teach until they could get a replacement. The 2nd grade child went to school first day and when she came home, her mother asked her who her teacher was and she stated, "the same

one I had last year, but you ought to see her this year, she sticks way out in front."

L.F., R.N.  
Mebane, N. C.

#### A Good Try

I had delivered a fine boy to one of my patients; her 4th to be exact, and about three weeks after delivery she came in with some insurance papers to be filled out. My nurse brought her into me and I noticed that the insurance papers were for an accident policy. I told her that these papers were for an accident and her reply was, "this was an accident, believe me!"

W.C.M., M.D.  
Branson, Missouri

#### A Logical Explanation

This particular young mother had been coming to me right from the start of her second pregnancy. Her little boy of four years of age accompanied her

—Concluded on page 23a

SEARLE

*announces...*

a superior psychochemical  
for the management of both  
minor and major  
emotional disturbances

dar



- more effective than most potent tranquilizers
- as well tolerated as the milder agents
- consistent in effects as few tranquilizers are

# Dartal

**Dartal is a unique development of Searle Research,  
proved under everyday conditions of office practice**

It is a single chemical substance, thoroughly tested and found particularly suited in the management of a wide range of conditions including psychotic, psycho-neurotic and psychosomatic disturbances.

Dartal is useful whenever the physician wants to ameliorate psychic agitation, whether it is basic or secondary to a systemic condition.

In extensive clinical trial Dartal caused no dangerous toxic reactions. Drowsiness and dizziness were the principal side effects reported by non-psychotic patients, but in almost all instances these were mild and caused no problem.

Specifically, the usefulness of Dartal has been established in psychoneuroses with emotional hyperactivity, in diseases with strong psychic overtones such as ulcerative colitis, peptic ulcer and in certain frank and senile psychoses.

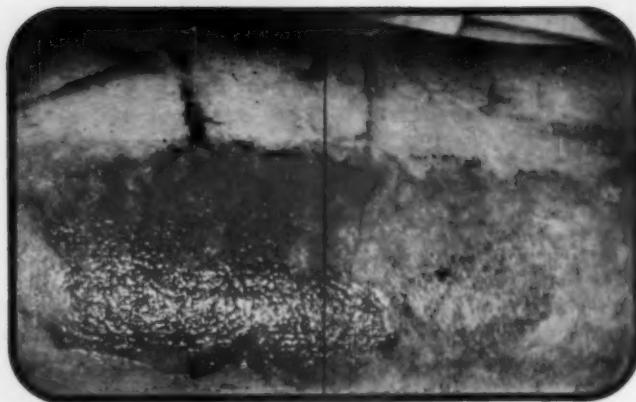
**Usual Dosage**

- In psychoneuroses with anxiety and tension states one 5 mg. tablet t.i.d.
- In psychotic conditions one 10 mg. tablet t.i.d.



dihydrochloride

brand of thiopropazate dihydrochloride



*Skin graft donor site after 2 weeks' treatment with...*

*petrolatum gauze—still  
largely granulation tissue*

*FURACIN gauze—  
completely epithelialized*

## **OBJECTIVE EVIDENCE OF SUPERIOR WOUND HEALING**

was obtained in a quantitative study of 50 donor sites, each dressed half with FURACIN gauze, half with petrolatum gauze. Use of antibacterial FURACIN Soluble Dressing, with its water-soluble base, resulted in more rapid and complete epithelialization. No tissue maceration occurred in FURACIN-treated areas. There was no sensitization.

Jeffords, J. V., and Hagerty, R. F.: Ann. Surg. 145:169, 1957

**FURACIN®** . . . brand of nitrofurazone  
the broad-range bactericide that is *gentle to tissues*

**spread** FURACIN Soluble Dressing: FURACIN 0.2% in water-soluble ointment-like base of polyethylene glycols.

**sprinkle** FURACIN Soluble Powder: FURACIN 0.2% in powder base of water-soluble polyethylene glycols. Shaker-top vial.

**spray** FURACIN Solution: FURACIN 0.2% in liquid vehicle of polyethylene glycols 65%, wetting agent 0.3% and water.

**EATON LABORATORIES, NORWICH, N.Y.**

*Nitrofurans—a NEW class of antimicrobials— neither antibiotics nor sulfonamides*

each time, and closely watched what I did for his mother.

Finally about the seventh or eighth month of her pregnancy, I was taking the mother's pressure, when the little boy, watching me closely, suddenly burst out, and with eyes lit up like saucers, said, "I know why mommie is getting big, doctor pumps her full of air each time she comes here!"

D.D.B., M.D.  
Papillion, Nebraska

#### **Delivery Date Needed**

An obstetrical patient argued vehemently over the date which I had set for her Caesarian Section. She insisted that it should be earlier than scheduled. She went on to explain, "My husband operates a dairy farm. He knows exactly when the cows will calve because he keeps a record of the dates when the cows are serviced. I have to have my operation on July 15th, because I was serviced on October 2nd."

H.W., M.D.  
Madera, California

#### **From Your Patients**

I had been going through my cabinet, which contained surplus medical apparatus and bits of equipment. For days I had puzzled over one long rubber-edged instrument, which I had yet to identify and properly classify. As I fingered this instrument for the dozenth time, conceiving and rejecting its possible application to all areas of the body, my next patient entered. Without hesitation, he looked at me studying the instrument and asked,

(Vol. 86, No. 1) January 1958

"Hey, Doc, what are you doing with that windshield wiper?"

L.S., M.D.  
New York, New York

#### **Mixed Letters**

In these *modern times*, both patients and doctors are confronted with abbreviations of medicine, such as "S. O. B." (shortness of breath version), "R and R," "P.M.I," "Pond A," etc. After instructing a patient recently to go to a laboratory for a P.B.I. test for thyroid function, it was amusing but not surprising when she called up to inquire if the lab had sent in her "I.B.M. Test."

E.O.M., M.D.  
Indianapolis, Indiana

#### **Acting Up**

My wife who is an R-N answered my phone at 2 a.m. A male voice asked for me "in a hurry." As I was gone she inquired as to what was the difficulty. Answer, "The baby is having convulsions." My wife asked, "How old is the baby?" Answer, "It hasn't been born yet."

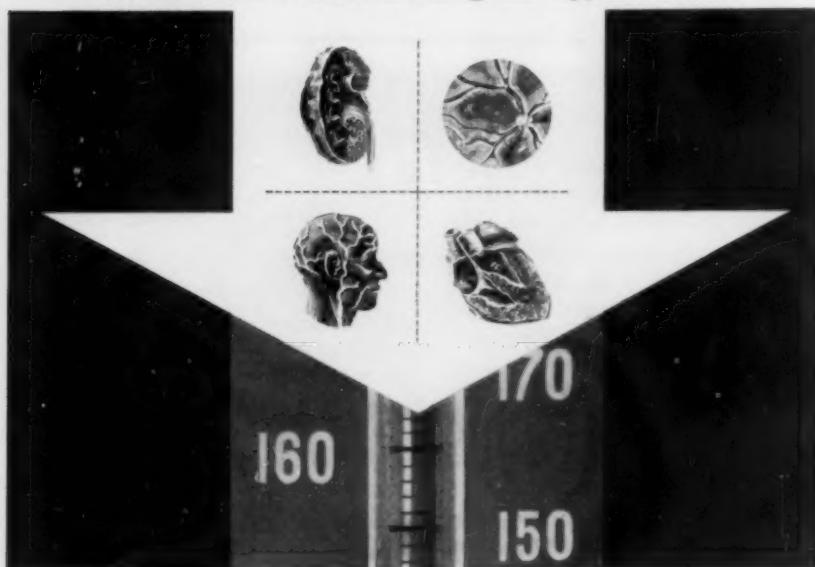
M.S., M.D.  
Omaha, Nebraska

#### **Speaking of Color**

One summer day a buxom blonde came in the office for her usual weekly liver injection. As she raised her skirt for the injection, without thinking and to my embarrassment, I stated, "You have a nice tan, Mrs. Jones!"

Anonymous

## for severe essential or malignant hypertension



### Methium lowers blood pressure in 88% of patients, relieves symptoms

In addition to lowering pressures in 88% of hypertension patients with diastolic readings of 140 or higher, Methium therapy also produced substantial improvements in related symptomatology (see table).<sup>1,2</sup> The value and safety of Methium has been demonstrated in long-term management—first to lower, then stabilize blood pressure while arresting many cardinal symptoms associated with renal, cardiac and visual functions.<sup>1,3,4</sup>

Administration of Methium—a potent, autonomic ganglionic blocking agent—requires careful supervision.<sup>2</sup> However, with thorough evaluation of the patient and subsequent adjustment of dosage to individual needs, Methium is a dependable, safe and highly effective hypotensive agent.

Symptom or sign	No. Patients Complaining	Patients Improved
Headache	38	30 (79%)
Precordial pain	31	22 (71%)
Eye ground changes	33	30 (69%)
Heart failure	36	26 (72%)
Abnormal EKG strain	48	32 (67%)

*Summary, by symptomatologic categories, of improvements from Methium therapy for severe, essential, and malignant hypertensive patients.*

**References:** 1. Moyer, J. H.; Miller, S. I. and Ford, R. V.: J.A.M.A. 152:1121 (July 18) 1953.  
2. Kuhn, P. H.: Angiology 4:195 (June) 1953.  
3. Ford, R. V. and Spurr, C. D.: Am. Pract. 5:251 (April) 1954. 4. Wolfe, J. B.; Walkow, M. D.; Nagler, J. H. and Anastasia, J.: J. Am. Geriatric Soc. 2:365 (June) 1954.

# Methium®

chloride

WARNER - CHILCOTT



**this tablet is  
a whole day's  
sulfa dosage**



# 24-hour sulfa therapy ...with a single tablet



"THE PHARMACOLOGICAL PROPERTIES OF SULFAMETHOXYPYRIDAZINE ARE VERY FAVORABLE FOR CLINICAL USE . . . A SINGLE DAILY DOSE [1 TABLET] PRODUCED PLASMA AND URINE CONCENTRATIONS THAT WERE GENERALLY ACCEPTED AS ADEQUATE FOR ANTIMICROBIAL ACTIVITY."<sup>1</sup>

# Midice<sup>®</sup>

(sulfamethoxypyridazine, Parke-Davis)

The new Parke-Davis product, MIDICEL, represents the fulfillment of a long quest in sulfonamide therapy—a long-acting antimicrobial agent that provides a sustained therapeutic effect with convenient low oral dosage.

**MIDICEL** provides these long-sought advantages in sulfonamide therapy:

**1 tablet-a-day convenience**<sup>1-4</sup>—no complicated regimens—no forgotten or omitted doses—no middle-of-the-night medication.

**rapid effect**<sup>1,2,4,5</sup>—prompt absorption, good tissue diffusion—rapid therapeutic blood levels.

**prolonged action**<sup>1-5</sup>—therapeutic blood and urine concentrations sustained day and night on 1 tablet a day.

**broad-range antibacterial activity** exerts potent antibacterial action. Effective prolonged blood levels require only a fraction of the dosage usual for most other sulfonamides; especially valuable in urinary tract infections due to sulfonamide-sensitive organisms.

**greater safety**<sup>1-5</sup>—high solubility in acid urine, slow renal excretion, low acetylation and low dosage provide unusual freedom from crystalluria and other complications.

**References:** (1) Jackson, G. C., & Gribble, H. G.: *Ann. New York Acad. Sc.* **69**:493, 1957. (2) Jones, W. F., & Finland, M.: *Ibid.* **69**:473, 1957. (3) Lepper, M. H.; Simon, A. J., & Marienfeld, C. J.: *Ibid.* **69**:485, 1957. (4) Ross, S.; Ahrens, W. E., & Zaremba, E. A.: *Ibid.* **69**:501, 1957. (5) Walker, W. F., & Hamburger, M.: *Ibid.* **69**:509, 1957.

**Adult Dosage:** Initial (first day) dosage: 2 tablets (1 Gm.) for mild or moderate infections, or 4 tablets (2 Gm.) for severe infections. Maintenance dosage: 1 tablet (0.5 Gm.) daily.

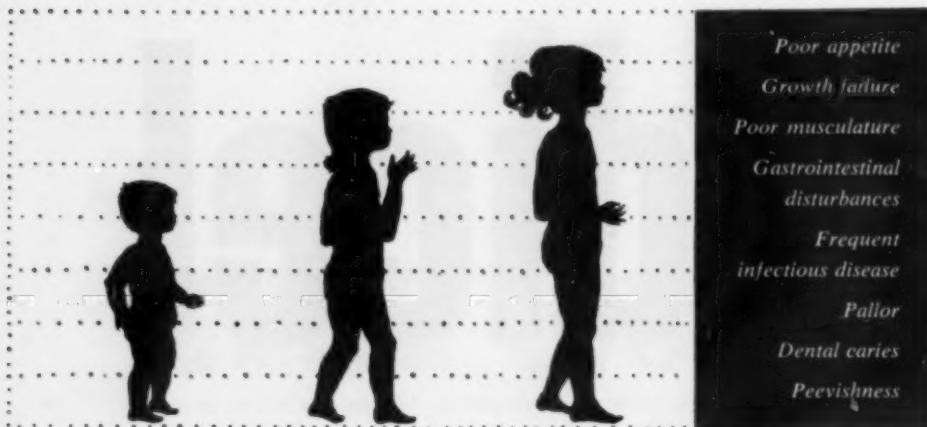
**Children's Dosage:** According to weight. See literature for details of dosage and administration.

**Packaging:** 0.5 Gm. tablets, quarter-scored, bottles of 24 and 100.



**PARKE, DAVIS & COMPANY • DETROIT 32, MICHIGAN**

# THE LOW PROTEIN PROFILE?



Habitually low intake of high quality protein foods, such as meat, fish, eggs or cheese, leads to the common childhood syndrome of hypoproteinosis — recognizable by the signs and symptoms of the **LOW PROTEIN PROFILE**.

Cerofort Drops and Cerofort Elixir can help these children!

The essential amino acid, lysine, will increase the nutritional value of the marginal protein in bread, cookies, macaroni, or other cereal foods. In these low quality proteins, lysine establishes an amino acid pattern similar to that of high quality protein, thus approximately doubling their tissue-building value. The B vitamins will stimulate lagging appetites so that more food of better quality will be consumed.

Long established dietary habits are slow to change, but Cerofort Drops and Cerofort Elixir work quickly. They have been developed for your **LOW PROTEIN PROFILE** patients.

## FOR INFANTS AND CHILDREN UP THROUGH THE EARLY SCHOOL YEARS— CEROFORT DROPS

The daily dose of 1.5 cc. provides:

L-Lysine Monohydrochloride	450 mg.*
Vitamin B <sub>12</sub>	25 mcg.
Thiamine Hydrochloride	10 mg.
Pyridoxine Hydrochloride	5 mg.
Alcohol 1%	

\*approximately equivalent to 340 mg. of L-lysine

Pleasant tasting, readily miscible with all liquid foods. Recommended dose: one dropperful (0.5 cc.) t.i.d. at mealtime for maximal benefit of lysine fortification. For infants, add 0.5 cc. to formula t.i.d. Shake to mix. Or, add three 0.5 cc. dropperfuls to entire day's supply of formula after mixing ingredients and before bottling.

Supplied in bottles of 24 cc. with dropper marked to deliver approximately 0.5 cc.

## FOR OLDER CHILDREN AND ADOLESCENTS—CEROFORT ELIXIR

The daily dosage of 3 teaspoonfuls (15 cc.) one with each meal provides:

L-Lysine Monohydrochloride	790 mg. *
Vitamin B <sub>12</sub>	25 mcg.
Thiamine Hydrochloride	10 mg.
Riboflavin	10 mg.
Pyridoxine Hydrochloride	2 mg.
Niacinamide	100 mg.
Panthenol	20 mg.

Alcohol 5%

\*equivalent to 600 mg. L-lysine

Supplied in bottles of 8 fl. oz. and gallons

## USE

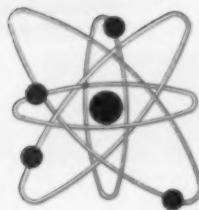
# Cerofort<sup>®</sup> drops elixir

L-lysine and important B vitamins

first with lysine



WHITE LABORATORIES, INC.  
Kenilworth, N. J.



## ***Diagnosis, Please!***

Edited by Maxwell H. Poppel, M.D., F.A.C.R., Professor of Radiology,  
New York University College of Medicine and Director of Radiology, Bellevue Hospital Center

### **WHICH IS YOUR DIAGNOSIS?**

1. Tuberculosis	3. Neurotrophic joint
2. Villous synovitis	4. Simple dislocation

*(Answers on page 154a)*



# WANTED



RELIEF  
FROM  
ACNE

**Fostex®** is an essential adjunct to treatment

**IN ACNE**, Fostex Cream and Fostex Cake

- **decrease, peel and degrease the skin**
- **unblock pores... help remove blackheads**
- **help prevent pustule formation**
- **minimize spread of infection**

**Fostex** effectiveness is provided by Sebulytic® (sodium lauryl sulfoacetate, sodium alkyl aryl polyether sulfonate, sodium diocetyl sulfosuccinate) a new combination of surface active cleansing and wetting agents with remarkable antiseborheic, keratolytic and antibacterial action, enhanced by sulfur 2%, salicylic acid 2% and hexachlorophene 1%.

Fostex is easy to use. The patient stops using soap on acne skin and starts washing with Fostex. Effective and well tolerated... assures patient acceptance and cooperation.

**FOSTEX CREAM** for therapeutic washing of the skin in the initial phase of the treatment of acne, when maximum degreasing and peeling are desired.



in 4.5 oz. jars

**FOSTEX CAKE** for maintenance therapy to keep the skin dry and substantially free of comedones.



in bar form

## WESTWOOD PHARMACEUTICALS

Division of Foster-Milburn Co.

467 Dewitt Street

Buffalo 13, New York

*In urinary-tract infections*

**HIGH TISSUE LEVELS**

**HIGH BLOOD LEVELS**

**LOW TOXICITY**

SUSPENSION

**SULFOSE®**

Triple Sulfonamides, Wyeth  
(Trisulfapyrimidines: Sulfaiazine,  
Sulfamerazine, Sulfamethazine)

TABLETS



Philadelphia 1, Pa.

This advertisement con-  
forms to the Code for  
Advertising of the Physi-  
cians' Council for Infor-  
mation on Child Health



# AN AMES CLINIQUICK

CLINICAL BRIEFS FOR MODERN PRACTICE



just wet... . . . and read

*does proteinuria occur more frequently in any type of heart failure—myocardial hypertrophy, mitral valve, coronary artery, aortic valve or hypertensive heart disease?*

No. The incidence of proteinuria is about equal among the various types of cardiac patients in failure.

*Source*—Race, G. A.; Scheifley, C. H., and Edwards, J. E.: Circulation 13:329, 1956.

*first colorimetric test for proteinuria*

**ALBUSTIX** Reagent Strips. Bottles of 120.  
TRADEMARK

*also available as:*

**ALBUTEST®** Reagent Tablets. Bottles of 100 and 500.  
BRAND



AMES COMPANY, INC. • ELKHART, INDIANA  
Ames Company of Canada, Ltd., Toronto



## the 9 months that matter...

From the earliest months of pregnancy, through birth and lactation, Calcisalin offers nutritional support so important for both mother and child.

**A complete prenatal supplement.** Calcisalin is designed for routine use throughout pregnancy and assures important vitamin and mineral benefits. The daily dose provides

- vitamins and iron
- calcium in *usable* form
- phosphate-eliminating aluminum hydroxide

**Provides usable calcium.** Recent evidence indicates that phosphate-containing supplements

can actually cause calcium blood levels to fall.<sup>1-5</sup> But Calcisalin supplies calcium in the *usable* form of the lactate salt. To absorb excess dietary phosphorus, Calcisalin also provides reactive aluminum hydroxide gel. Thus the risk of inadvertently raising the phosphorus level to the point where it interferes with calcium absorption is avoided.

**Dosage:** Two tablets three times daily after meals. **Available:** Bottle of 100 tablets and 8-oz. reusable nursing bottles containing 300 tablets.

**References:** 1. Obst. & Gynec. 1:94 (Jan.) 1953. 2. Illinois M. J. 105:305 (June) 1954. 3. Bull. Margaret Hague Maternity Hosp. 6:107 (Dec.) 1953. 4. Missouri Med. 51:727 (Sept.) 1954. 5. J. Michigan M. Soc. 53:862 (Aug.) 1954.

# Calcisalin®

**WARNER-CHILCOTT**  
100 YEARS OF SERVICE TO THE MEDICAL PROFESSION



## ANGINA AND CORONARY DISEASE

### The Value of Blood Cholesterol Regulation

Studies<sup>1-4</sup> indicate that atherosclerosis is the underlying disease process in 80-90% of Americans who had myocardial infarction or angina with abnormal EKG patterns. It is also known that patients with coronary disease frequently have elevated blood cholesterol levels.

In these studies<sup>1-4</sup> patients with coronary occlusion "felt better" when their blood cholesterol was reduced by diet and a special cholesterol lowering formula. Anginal symptoms abated and none had a new coronary occlusion while on this therapy.

(1) Lobeck, T. D.: Am. J. Clin. Nutrition 3:132, 1955. (2) Gertler, M. M., et al.: Circulation 2: 696, 1950. (3) Gofman, J. W., et al.: Mod. Med. 21: 119, 1953. (4) Barr, D. P., et al.: Am. J. Med. 11: 480, 1951.

The preponderance of evidence indicates that all persons who have elevated blood cholesterol (with or without clinical evidence of disease) . . . and all persons with a condition associated with atherosclerosis (even though blood cholesterol is normal) are candidates for a cholesterol regulation program. ARCOFAC (Armour Cholesterol Lowering Factor) was specifically formulated to lower blood cholesterol with as little as 1 dose a day . . . and at the same time allow the patient to eat a palatable, balanced and nutritious diet. ARCOFAC is the first truly practical and effective method for lowering blood cholesterol levels.

Each tablespoonful of ARCOFAC emulsion contains:

Linoleic acid . . . . .	6.8 Gm.
Vitamin B <sub>6</sub> . . . . .	0.6 mg.
Mixed tocopherols . . . .	11.5 mg. (vitamin E)

# Arcofac

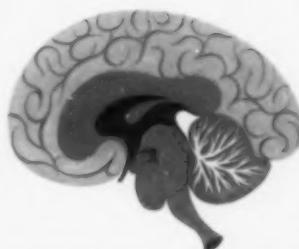
Armour Cholesterol Lowering Factor



THE ARMOUR LABORATORIES

A DIVISION OF ARMOUR AND COMPANY • KANKAKEE, ILLINOIS

# relaxes both mind & muscle without impairing mental or physical efficiency



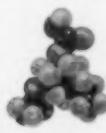
well tolerated, relatively nontoxic / no blood dyscrasias, liver toxicity, Parkinson-like syndrome or nasal stuffiness / well suited for prolonged therapy

*Supplied: 400 mg. scored tablets, 200 mg. sugar-coated tablets. Usual dosage: One or two 400 mg. tablets t.i.d.*

*For anxiety, tension and muscle spasm in everyday practice.*

**Miltown®**  
tranquilizer with muscle-relaxant action

2-methyl-2- $\alpha$ -propyl-1,3-propanediol dicarbamate



THE ORIGINAL MEPROBAMATE

DISCOVERED & INTRODUCED BY

W WALLACE LABORATORIES

NEW BRUNSWICK, NEW JERSEY



## Anxiety of pregnancy

'Miltown' therapy resulted in complete relief from symptoms in 88% of pregnant women complaining of insomnia, anxiety, and emotional upsets.\*

'Miltown' (usual dosage: 400 mg. q.i.d.) *relaxes both* mind and muscle and alleviates somatic symptoms of anxiety, tension, and fear.

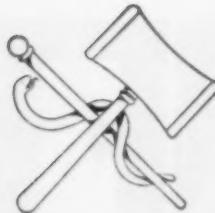
'Miltown' therapy does not affect the autonomic nervous system and *can be used with safety throughout pregnancy.*\*

# Miltown®

CH-5571

\*Belafsky, H. A.,  
Breslow, S.  
and Shangold, J. E.:  
*Meprobamate in pregnancy.*  
*Obst. & Gynec.*  
9:703, June 1957.

THE ORIGINAL MEPROBAMATE
DISCOVERED & INTRODUCED BY
WALLACE LABORATORIES
NEW BRUNSWICK, NEW JERSEY



## What's Your Verdict?

Edited by Ann Ledakowich, Member of the Bar of New Jersey

**W**hile a patient in the hospital, the young woman received a transfusion of "bad" blood which caused a condition of "homologous serum jaundice" or "homologous serum hepatitis". The complaint filed in a court action against the hospital recites that the blood was "sold" to the patient for \$60. This sum was paid in addition to the regular charge for room, board and hospital facilities and services.

The complaint contains no allegation of negligence. This action is novel in its theory that the furnishing of blood by a hospital is a sale within the Sales Act. This means that the law affixes to the transaction two implied warranties: that the blood is "reasonably fit for the purpose" for which required, and that it is of "merchantable quality." When these warranties are not met, liability attaches upon the seller regardless of negligence or fault.

The young woman's attorney defines a sale as an agreement whereby the seller transfers the property in goods to the buyer for a consideration called the price. Since these conditions are found in the allegations of the complaint, the plaintiff should be permitted to present the evidence to sustain them. When a person orders drugs from a drug store, it constitutes a sale to which the law annexes warranties. There is no logical distinction between that transaction and the one presented here.

Council for the hospital regards the agreement between a hospital and patient as one for services only in which the hospital provides trained personnel and specialized facilities in an endeavor to restore the patient's health. Concepts of purchase

and sale are inconsistent with the service of providing such healing materials as medicines, drugs, or blood. When service predominates and the transfer of personal property is but an incidental feature thereof, the transfer is not deemed a sale within the meaning of the Sales Act.

The opinion present at court was that there is neither a means of detecting the presence of the jaundice-producing agent in the donor's blood nor a practical method of treating the blood to be used for transfusion so that the danger of "bad" blood might be eliminated.

The trial court dismissed the complaint for failure to state a cause of action.

*(Answer on page 144a)*



# ALL QUIET ON THE COUGHING FRONT

# “COTHERA”

Brand of Dimethocaine hydrochloride

SYRUP

MEDICAL TIMES

# NEW COUGH MODERATOR

## SPECIFIC ANTITUSSIVE...

"COTHERA" moderates intensity and frequency of coughing through a selective action apparently on the medullary cough center... subdues but does not abolish the cough reflex. The natural reflex for removal of secretions is retained.

## ACTS WITHIN MINUTES—LASTS FOR HOURS...

"COTHERA" provides a local anesthetic and soothing demulcent action to induce almost immediate relief of 'sandpaper' throat and 'annoying tickle'... followed by sustained moderation of the cough reflex, lasting for four to six hours and frequently throughout an entire night with one dose.

## NON-NARCOTIC...

"COTHERA" is nonaddictive; does not cause respiratory depression, gastric irritation, or constipation. It is well tolerated by children and elderly patients, even after continued use. (Antitussive action is equal to  $\frac{1}{4}$  gr. codeine per teaspoon dose.)

## GUARDS AGAINST BRONCHOSPASM...

"COTHERA" exerts a mild musculotropic spasmolytic action tending to protect against possible harmful effects and cough-aggravation of bronchospasm.

## CHERRY-FLAVORED...

"COTHERA" is completely acceptable to all age groups.

*Indications:* "COTHERA" Syrup is specifically indicated for irritating, useless, or chronic coughs such as those associated with the common cold, children's diseases, excessive smoking. It may be used safely for short-term or prolonged treatment.

*Dosage:* Adults and children over 8 years—1 to 2 teaspoonfuls (25-50 mg.) three or four times daily. Children, 2 to 8 years— $\frac{1}{2}$  to 1 teaspoonful three or four times daily.

*Supplied:* 25 mg. per 5 cc. (teaspoonful), bottles of 16 fluidounces and 1 gallon.

Ayerst Laboratories  New York 16, N. Y. • Montreal, Canada



an advanced method of  
theophylline therapy

# CLYSMATHANE

(FLEET)

Disposable Rectal Unit

simple...safe...effective...

For the alleviation of symptoms in bronchial asthma and the acute episodes of heart failure, CLYSMATHANE (Fleet) supplies prompt therapeutically adequate blood levels of theophylline.<sup>(1)</sup>

Even after repeated dosage CLYSMATHANE (Fleet) minimizes the side effects often associated with oral or parenteral theophylline administration. The plastic squeeze bottle (with attached, prelubricated, non-traumatic rectal tube) is designed for self-administration.

**Dosage:** One CLYSMATHANE (Fleet) Unit as a retention enema before retiring or as directed. Available on prescription at professional pharmacies.

**Composition:** Theophylline monoethanolamine (Theamin, Fleet) 0.625 Gm. aqua 37.0 ml. in rectal dispenser. Units packed in individual cartons, manufacturer's label readily removable.

**REFERENCE:** (1) Ridolfo, A. S. & Kohlstaedt, K. G., "A simplified method for the rectal instillation of theophylline"—to be published



# CLYSMATHANE

(FLEET)

Disposable Rectal Unit



Professional Samples and literature on request

**C. B. FLEET CO., INC.**

Lynchburg, Virginia

Announcing... a new useful dosage form of Equanil

# Wyseals / Equanil®



Meprobamate, Wyeth

- Especially coated, easy to swallow
- Tranquilizer-conscious patients will not recognize new yellow tablets
- Different from regular 400-mg. and 200-mg. tablets
- Same indications, same dosage as original EQUANIL

## NOW YOU HAVE A CHOICE OF 3 EQUANIL TABLETS

WYSEALS EQUANIL, 400 mg.  
Yellow tablets, bottles of 50.

EQUANIL, 200 mg.  
Distinctive, shield-shaped,  
scored tablets for fine dosage  
adjustment, bottles of 50.

EQUANIL, 400 mg.  
Regular, scored, white  
tablets, bottles of 50.

**ISP**  
EQUANIL®  
PHENERGAN® HCl  
SPARINE® HCl



—A Wyeth normotropic  
drug for nearly every  
patient under stress

\*Tranquillant, Phenothiazine  
Hydrochloride, Wyeth.  
Strengazine Hydrochloride,  
Wyeth.

# IN RESPIRATORY INFECTIONS

In a series  
of respiratory infections

consisting of cases of acute  
bacterial pharyngitis — includ-  
ing scarlet fever — acute  
sinusitis, laryngotracheobron-  
chitis, pneumonia

“... excellent results [were  
obtained] with tetracycline in  
the treatment of pneumococic  
and hemolytic streptococic  
infections. . . . Adverse symptoms  
mainly gastrointestinal, due to  
the administration of tetracy-  
cline, were minimal.”<sup>1</sup>

1. Wood, W. S.; Kipnis, G. P.; Spies,  
H. W.; Dowling, H. F.; Lepper, M. H.,  
and Jackson, G. F.: A.M.A. Arch. Int.  
Med. 94:351 (Sept.) 1954.



## TETRABON® V

POTENTIATED TETRACYCLINE HOMOGENIZED SYRUP

oral tetracycline  
now potentiated for higher,  
faster blood levels —  
in a delightful, orange-flavored,  
orange-colored liquid  
especially for pediatric  
patients and older patients who  
prefer liquid medication

Bottles of 2 oz. and 1 pint, each 5 cc.  
teaspoonful containing potentiated  
tetracycline equivalent to 125 mg.  
of tetracycline hydrochloride

## TETRACYN® V

POTENTIATED TETRACYCLINE CAPSULES

oral tetracycline now  
potentiated for higher, faster  
blood levels — in  
convenient capsule form

Bottles of 16 and 100, each capsule  
containing potentiated tetracycline  
equivalent to 250 mg. of tetracycline  
hydrochloride

For patients with influenza and  
those with minor respiratory  
infections, TETRACYDIN® Tablets  
(tetracycline-analgesic-anti-  
histamine) provide support on  
two levels: 1) prompt sympto-  
matic relief; and 2) prophylaxis  
of secondary complications  
such as infections due to  
pneumococci, streptococci and  
staphylococci.

PFIZER LABORATORIES, Division, Chas. Pfizer & Co., Inc., Brooklyn 6, N. Y.





## Coroner's Corner

A beautiful imported German apothecary jar will be sent to each contributor of an unusual case report.

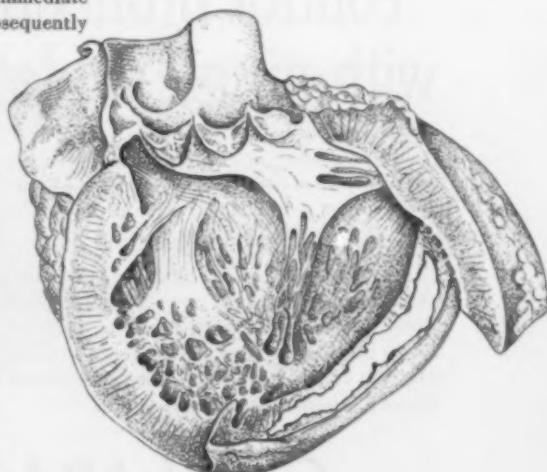
### AUTOPSY FINDINGS

The following case makes clear the danger of interpreting the origin of a myocardial scar by historical data.

A 62 year old white man who was injured by an auto truck survived ten days in the hospital. Necropsy revealed a fracture of the left humerus and a transverse fracture of the sternum between the manubrium and the body. The immediate cause of death was an extensive hypostatic bronchopneumonia. The heart was most interesting for in the posterior wall of the left ventricle there was a large fibrous scar in the myocardium which obviously had antedated his recent injury by many months. Although the organ was moderately enlarged and the coronary arteries were sclerotic, nowhere could an occlusion be made out. There was no prior history of heart disease. Suppose that this patient had not developed a fatal bronchopneumonia but, having survived the immediate effects of his injuries, had subsequently developed symptoms of coronary insufficiency with death occurring months after the trauma. It is fairly certain that most of the proponents of cardiac contusion as a cause of delayed disability would毫不犹豫地 relate the myocardial scar and the cardiac disability to the original injury and would probably argue that the fractured sternum was corroborative of a direct trauma to the heart; that the coronary arteriosclerosis, since it was not occlusive, was insufficient to ex-

plain the myocardial scar. Moreover, they would also point out that the man had had no serious heart disease before the accident because he had never complained of his heart. In other words, in retrospect they would consider the case a proved example of cardiac contusion going on to fibrosis with resultant cardiac disability and death. They would point convincingly to the history of accident and to the autopsy findings. If this person had survived a year instead of ten days after injury, the autopsy findings would have been much more convincing of a healed contusion than any other described in the literature.

[From Gonzales, T. A., Vance, M., Helpern, M., and Umberger, C. P.: "Legal Medicine, Pathology, and Toxicology", Appleton-Century-Crofts, Inc.]





## control bronchospasm with single-tablet dosage!

Cholarace, 1 tablet q.i.d., gives fast symptomatic relief of bronchospasm and helps prevent new attacks. Gastric irritation? Virtually none! Prescribe Cholarace for bronchospasm due to asthma, hay fever, or any cause.

### CHOLARACE WORKS TWO WAYS!

*Tablet Coating* contains racetephrine HCl (20 mg.) for quick spasmolysis with minimal CNS stimulation . . . plus pentobarbital (27.5 mg.) for gentle relaxation with no "barbiturate hangover."

*Tablet Core* provides long-lasting bronchodilatation with 200 mg. of well tolerated, easily absorbed choline theophyllinate (Choledyl®).

*Nepera Laboratories, Morris Plains, N. J.*

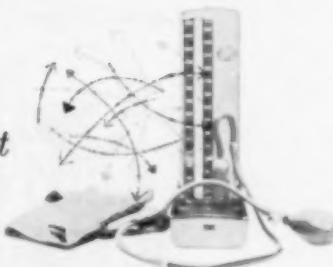
# CHOLARACE®

for complete bronchospasm control



**IN HYPERTENSION . . . for full response**

*Specific Agent*  
**PLUS** *Specific Adjuvant*



Typically, your hypertensive patient has two sets of symptoms—hypertensive and emotional. Each may intensify the other. For *total* management, the use of ANSOLYSEN and EQUANIL controls both sets of symptoms.<sup>1,2</sup>

ANSOLYSEN reduces the elevated pressure and induces corresponding remission in the hypertensive symptoms and signs. EQUANIL alleviates the complicating stress symptoms, relieves the anxiety, tension, nervousness, insomnia. Together, the two agents provide you with a means for *comprehensive* management of your hypertensive patient.

1. Dunsmore, R.A., and others: Am. J. M. Sc. 233:280 (March) 1957.
2. Fulton, L.A., and others: Am. Pract. & Digest Treat. 8:1376 (Sept.) 1957.





**used by 50 million  
passengers of the  
world's greatest airline!**

During much of the world's history, the announcement of another safe arrival was often accompanied by storm warnings in the area of artificial feeding for the newborn infant.

The problems of digestive disturbances in infants were a prime concern of medical science. Working, progressing, medical research eventually determined that one of the most satisfactory solutions to bottle-feeding problems was evaporated milk.

Since that time, more than 50 million babies have been raised on evaporated milk formulae . . .

more than 50 million times, Captain Stork's passengers have made the transition from happy landings to happy growing.

Still today, evaporated milk is unique in its combination of advantages for bottle feeding —a level of protein sufficient to duplicate the growth effect of human milk . . . flexibility . . . maximum nutritional value . . .

and all this at *minimum cost*.

**PET EVAPORATED MILK . . . backed by  
72 years of experience and continuing research**



**PET MILK COMPANY • ARCADE BUILDING • ST. LOUIS 1, MO.**



**better  
early than  
late, better  
late than never**

**make him want to  
stop overeating with**

**Ambar™** Tablets and Extentabs

Methamphetamine and Phenobarbital

Your obese patients may resist weight reduction because they fear losing the emotional security involved in overeating. AMBAR™ Tablets or Extentabs® add incentive to weight reduction, give the patient a better chance of holding off the disabling effects of continued overweight and obesity. Methamphetamine, a more potent CNS augmenter than amphetamine yet producing less cardiovascular effect, is combined with phenobarbital — result, mood amelioration without undesired excitation — weight reduction without jitters.

**Ambar Extentabs**

10 to 12 hours of appetite suppression in 1 controlled-release, extended action tablet  
Methamphetamine

Hydrochloride . . . . . 10.0 mg.  
Phenobarbital (1 gr.) . . . . . 64.8 mg.

**Ambar Tablets**

for conventional dosage or intermittent therapy

Methamphetamine

Hydrochloride . . . . . 3.33 mg.  
Phenobarbital (½ gr.) . . . . . 21.6 mg.

**A. H. ROBINS CO., INC., Richmond, Virginia** Ethical Pharmaceuticals of Merit Since 1878

REG. U. S. PAT. OFF. — PAT. APPLIED FOR



*for the first few days of life*

## VI-PENTA #1

provides K, E, and C, the vitamins needed particularly by prematures and newborns.



*for infants and young children*

## VI-PENTA #2

provides vitamins A, D, C, and E, essential for normal development.



*for all ages*

## VI-PENTA #3

provides A, D, C, and 5 B-complex vitamins for the greater nutritional demands of the growing years.



Identical in content and taste to the long-established Vi-Penta® Drops.

# FOR PROGRESSIVE VITAMIN THERAPY

ROCHE LABORATORIES • Division of Hoffmann-La Roche Inc. • Nutley 10, N.J.



**symptomatic relief...plus!**



# Achrocidin®

TETRACYCLINE ANTIHISTAMINE ANALGESIC COMPOUND

## tablets

ACHROCIDIN is a well-balanced, comprehensive formula for treating acute upper respiratory infections.

Debilitating symptoms of malaise, headache, pain, mucosal and nasal discharge are rapidly relieved.

Early, potent therapy is offered against disabling complications to which the patient may be highly vulnerable, particularly during febrile respiratory epidemics or when questionable middle ear, pulmonary, nephritic, or rheumatic signs are present.

ACHROCIDIN is convenient for you to prescribe—easy for the patient to take. Average adult dose: two tablets, or teaspoonfuls of syrup, three or four times daily.

ACHROMYCIN® Tetracycline 125 mg.  
Phenacetin . . . . . 120 mg.  
Caffeine . . . . . 30 mg.  
Salicylamide . . . . . 150 gm.  
Chlorothen Citrate . . . . . 25 mg.  
*Bottle of 24 tablets*

## syrup

Each teaspoonful (5 cc.) contains:  
ACHROMYCIN® Tetracycline equivalent to tetracycline HCl 125 mg.  
Phenacetin . . . . . 120 mg.  
Salicylamide . . . . . 150 mg.  
Ascorbic Acid (O) . . . . . 25 mg.  
Pyrilamine Maleate . . . . . 15 mg.  
Methylparaben . . . . . 4 mg.  
Propylparaben . . . . . 1 mg.

*Available on prescription only*

LEDERLE LABORATORIES DIVISION, AMERICAN CYANAMID COMPANY, PEARL RIVER, NEW YORK  
\*Reg. U. S. Pat. Off.



"A  
COAT  
FOR  
MEPROBAMATE"

"Meprotabs" are new, coated, white, unmarked 400 mg. tablets of meprobamate. ■ "Meprotabs" are pleasant tasting, and easy to swallow. ■ In this new form, the nature of medication is not identifiable by the patient. ■ "Meprotabs" are indicated for the relief of anxiety, tension and muscle spasm in everyday practice. ■ *Usual dosage:* One or two tablets t.i.d. ■ **"Meprotabs"**



WALLACE LABORATORIES, New Brunswick, N. J.

(2-methyl-2-n-propyl-1,3-propanediol dicarbamate)

sick of eating

# After Hours

Every Wednesday and Saturday afternoon during the Winter, you will find Doctor R. M. O'Rourke, of Detroit, Michigan, and his friend, Mr. Carter B. Robinson at the Detroit Golf Club. Are they spending a pleasant hour lunching in the grill room? Not on your life!

Dr. R. M. O'Rourke (kneeling)  
and Mr. Carter B. Robinson



These two hearty individuals are out on the "green" indulging in their favorite sport . . . winter golf.

Doctor O'Rourke has a few hints for other devotees of the game who would like to try winter golf. "We scrape the snow away with our boots in order to get a few swings at the ball. When we chip to the green, it counts as 'in' if you hit the flagstick. Otherwise, you have to chop until you either hit it or the ball stops within 'gimme' distance . . . anything inside the leather on the club."

Doctor O'Rourke's study of anatomy as related to the golf swing caused the National PGA to have him address one of their national conventions. "I'm almost sorry to see the snow melting," said Doctor O'Rourke, "because it means the end of winter golf."

R. M. O'Rourke, M.D.  
Detroit, Michigan

Photographs with brief description of your hobby will be welcomed. A beautiful imported German apothecary

Photographs with brief description of

# sick of eating



## ...sick after eating

"Mealtimes doldrums" (nausea, lack of appetite, gastrointestinal distress, dyspepsia, weakness and fatigue) are symptomatically consistent with biliary stasis. More than replacement therapy (bile salts) is needed. A copious flow of highly fluid bile—hydrocholeresis—promptly drains the biliary tree and clears away sluggish biliary matter, relieves irritation, and prevents infection of the bile ducts. Hydrocholeresis restores the physiologic supply of natural bile *from within* and achieves laxation without catharsis. Dehydrocholic acid is the most potent hydrocholeretic and the least toxic of the bile derivatives.

Spasmolysis is rapidly and effectively achieved by homatropine methylbromide which has been proved notably safe in the new, higher dosage of five milligrams.

Cholan V, a combination of dehydrocholic acid and homatropine methylbromide, affords prompt relief from symptoms of hepato-biliary insufficiency and spasm, and helps maintain adequate bile fluidity—especially indicated in dyspepsia, obesity, pregnancy, and alcoholism.

## new Cholan V

Each tablet contains 250 mg. Cholan DH® (dehydrocholic acid Maltbie) and 5 mg. homatropine methylbromide. One or two tablets t.i.d., after meals. Bottles of 100, 500, and 1,000.

Hydrocholeresis is contraindicated in jaundice and in complete bile duct obstruction.

*Also available:*

**Cholan DH®** (250 mg. dehydrocholic acid);

**Cholan HMB** (250 mg. dehydrocholic acid, 2.5 mg. homatropine methylbromide,  $\frac{1}{8}$  gr. phenobarbital).

*Write for free sample supply to Professional Service Department.*

**MALTBIE LABORATORIES DIVISION**

**WALLACE & TIERNAN, INC.**



Belleville 9, New Jersey

PCN-71

# In urinary tract disturbances Pyridium® achieves the first objective

(Brand of Phenylazo-diamino-pyridine HCl)



## relief of pain, urgency, frequency, burning in a matter of minutes

With PYRIDIUM, irritated urinary tissues are bathed in a continuous flow of analgesic fluid, keeping the patient comfortable during diagnostic procedures and while maintaining therapy. The benefits of therapy with PYRIDIUM include: • gratifying relief in a matter of minutes—long before specific therapy, if required, can take effect • elimination of urinary retention due to pain spasm • local analgesia only • complementary to any antibacterial of the physician's choice — allows separate control of analgesic and antibacterial therapy • simple, convenient dosage — just 2 tablets before meals for adults.

**WARNER-CILCO**

100 YEARS OF SERVICE TO THE MEDICAL PROFESSION

## *Alseroxylon less toxic than reserpine*

"...alseroxylon is an antihypertensive agent of equal therapeutic efficacy to reserpine in the treatment of hypertension, but with significantly less toxicity."

Ford, R.V., and Moyer, J.H.: *Rauwolfia Toxicity in the Treatment of Hypertension: Some Observations on Comparative Toxicity of Reserpine, a Single Alkaloid, and Alseroxylon, a Compound Containing Multiple Alkaloids*, Postgrad. Med., January, 1958.



*just two tablets  
at bedtime*

**Rauwiloid®**  
(alseroxylon, 2 mg.)  
*for gratifying  
rauwolfia response  
virtually free from side actions*



When more potent drugs are needed, prescribe

Rauwiloid® + Veriloid®

alseroxylon 1 mg. and clavosvir 3 mg.

for moderate to severe hypertension.

Initial dose 1 tablet t.i.d., p.c.

Rauwiloid® + Hexamethonium

alseroxylon 1 mg. and hexamethonium chloride dihydrate 250 mg.

in severe, otherwise intractable hypertension.

Initial dose  $\frac{1}{2}$  tablet q.i.d.

*Both combinations in convenient single-tablet form.*

# Medical Teasers

A Challenging Crossword Puzzle for the Physician

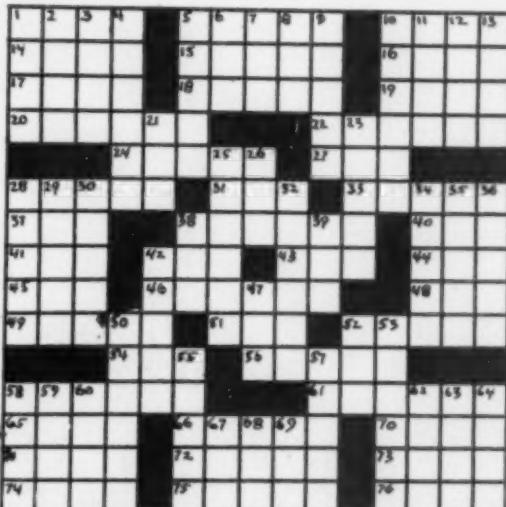
(Solution on page 146a)

## ACROSS

- Nevus
- Protective Sac
- Silver chloride
- Famous Author (Abbr.)
- Open sore
- A girl's name
- Cut adhesions
- Bone for the forearm (pl.)
- Baby carriage
- Mulct
- Brief writings
- A drop (Lat.)
- ogy, Funeral oration
- Pedunculated growth
- Mercuric sulfide
- Mosquito
- I have (contr.)
- Nearsighted
- Eggs
- What your thighs form when you sit down
- Barrier
- Radon, potassium (symbols)
- Reposition a fractured bone
- Before
- Eye (Lat.)
- Hydrocarbon (Suffix)
- Concentrated aqueous solution of sugar
- Baglike organ
- Urinary findings in chronic nephritis
- Used in golf
- Procreate
- A small empty space or cavity
- Highly pleased
- Pertaining to the wing of the nose
- Claw
- A roentgenogram
- Knee
- Eaten away
- Ionium, samarium (symbols)
- Evening (pl.)
- Kidneys (Lat.)
- Imitated

## DOWN

- The cheek bone
- Technical name or term



by Angela Koelliker

- Mislay
- Capacity for performing work
- Graduated glass cylinder
- The gum; gingiva
- Relative cardiac dullness (abbr.)
- Selenium, Iodine (symbols)
- Get up from sleep
- Sealed glass container for medications
- Convolutions of the cerebral cortex
- Public louse
- Escapes (slang)
- Optic nerve head
- Charlatan
- Controversial gland
- In the past
- Hemorrhoids
- Conad
- One with Hansen's disease
- An evergreen tree
- Measured quantities of medicine
- Occurrence
- Satisfies
- Macerate (abbr.)
- Favored ones
- Opiates
- The home of research
- Womb
- A unit of velocity
- Failure of muscular co-ordination
- Compound formed from an alcohol and acid by removal of water
- Hereditary factors in the chromosome
- Violent anger
- Elevation (abbr.)
- Walking stick
- Prefix denoting relation to atropine
- Soothe
- A double chromosome
- Exist
- Longitude (abbr.)
- Suffix denoting sugar

# Capillary and Vascular Integrity

*and the identifiable biologically-active components of citrus*

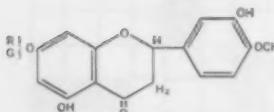
An abundance of evidence indicates the contributing role of certain identified citrus bioflavonoids in the treatment of capillary and vascular impairment resulting from stress conditions. The stress may be imposed by nutritional deficiencies, environment, drugs,

chemicals, toxins, virus, or infection.

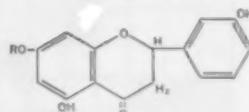
The wide range of application embraces: inflammatory, cardio-vascular, metabolic and infectious diseases and spontaneous abortion.

The identified flavonoid chemical entities under intensive investigation are:

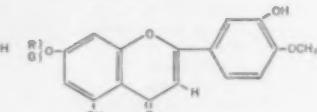
HESPERIDIN



ERIODICTYOL



DIOSMIN



*These are incorporated in the following products manufactured exclusively by Sunkist:*

Hesperidin Complex	{	Sources of Hesperidin
Hesperidin Purified		
Hesperidin Methyl Chalcone		
Lemon Bioflavonoid Complex	{	The available source of Eriodictyol and Diosmin, found in no other citrus fruit.

Their biological activity has been demonstrated, including:

Synergism with Ascorbic Acid  
Potentiation of Epinephrine  
Independent Vasoconstrictor Action  
Anti-hyaluronidase Effect  
Protection against (Selye) DOCA-Salt Injury resembling periarteritis  
Effect on Capillary Fragility

*These materials are finding wide use by the medical profession as incorporated in the specialties of leading pharmaceutical manufacturers.*

**Sunkist Growers**

PRODUCTS DEPARTMENT

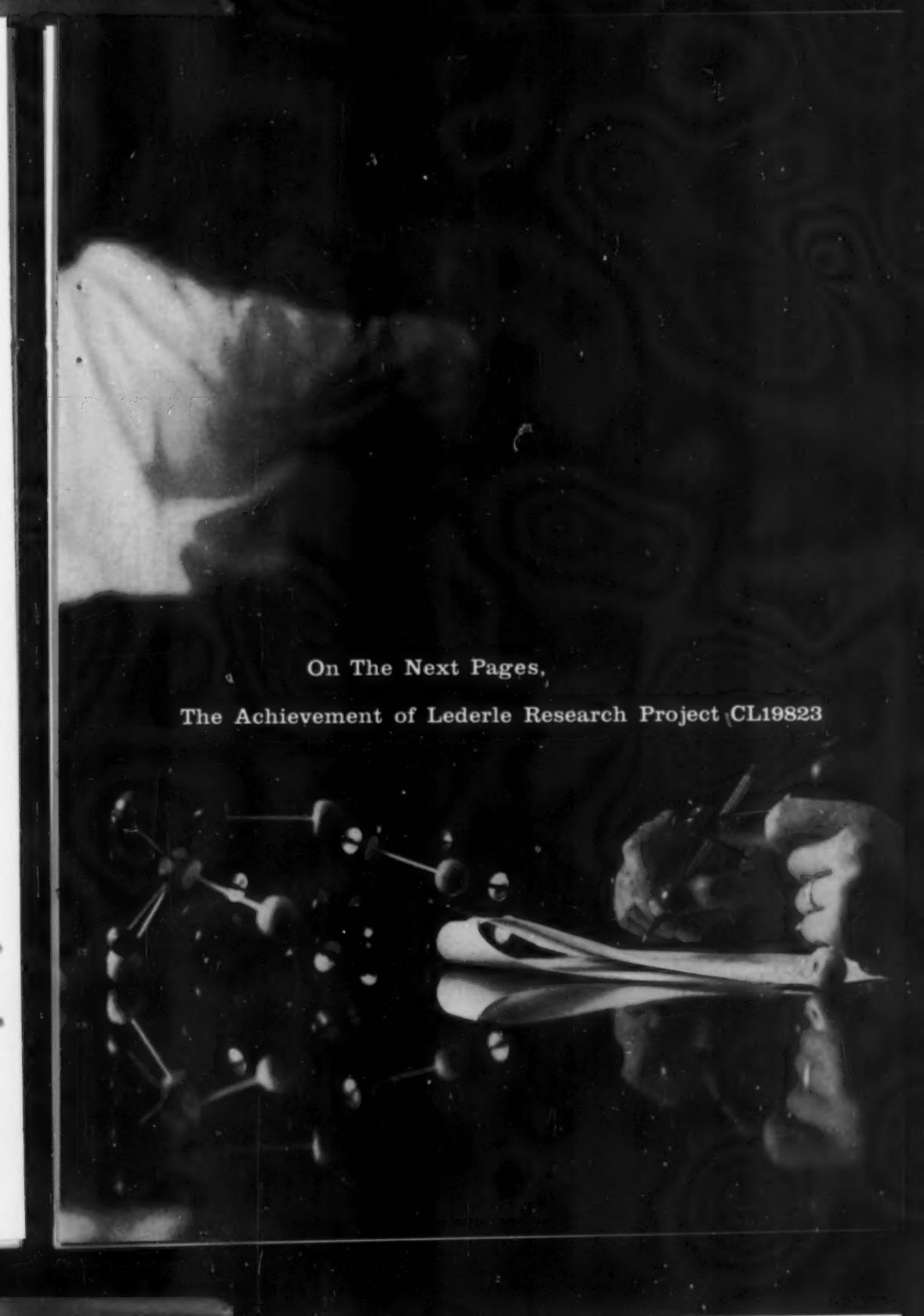


PHARMACEUTICAL DIVISION • ONTARIO, CALIFORNIA

*... first in research to identify and make available the physiologically-active components of citrus fruits.*

## REFERENCES:

1. Jevett, C. T., Ann. N. Y. Acad. Sci. 61, 700 (1955).
2. Greenblatt, R. B., Obst. Gyn. 2, 530 (1953).
3. Dill, L. V., Med. Ann. Dist. of Columbia, 23, 667 (1954).
4. Jacobson, B. D., Obstet. Gyn. 10, 40 (1957).
5. Rinehart, J. F., Ann. Rheumatic Diseases 5, 11 (1945).
6. Rinehart, J. F., Ann. N. Y. Acad. Sci. 61, 684 (1955).
7. MacLean, A. L. Read at General Clinical Sessions of Ophth. and Otolar., Southern Med. Assoc., (Nov. 24, 1947) Baltimore, Maryland.
8. Dreener, J. L., Am. Pract. Dig. Treatment 6, 912 (1955).
9. Warter, P. J., et al, Del. State Med. J. 20, 41 (1948).
10. Boines, G. J., Ann. N. Y. Acad. Sci. 61, 721 (1955).
11. Dietz, N., Jr., Ind. Med. Surg. 26, 229 (1957).
12. Macon, W. L., Jr., Ind. Med. Surg. 25, 525 (1956).
13. Martin, G. J., et al., Exp. Med. Surg. 12, 525 (1954).
14. Postvedt, G. A., Nut. Res. 12, 1 (1956).
15. Beiler, J. M. and G. J. Martin, J. Biol. Chem. 171, 507 (1947).
16. Bhagat, K., Ind. J. Med. Res. 34, 87 (1946).
17. Fuhrman, F. A., Am. J. Physiol. 181, 123 (1955).
18. Ambrose, A. M. and N. P. Plotnikoff, Fed. Proc. 15, 1283 (1956).
19. Bacharach, A. L. and M. E. Coates, J. Soc. Chem. Ind. 63, 198 (1944).
20. Horne, G. and H. Scarborough, Lancet 2, 66 (1940).



On The Next Pages,

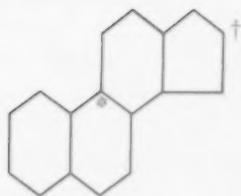
The Achievement of Lederle Research Project CL19823



Lederle announces a major drug with great new promise

# Arist

a new corticosteroid created to minimize the  
major deterrents to all previous steroid therapy



# Ocort<sup>®</sup>

Triamcinolone LEDERLE  
9 alpha-fluoro-16 alpha-hydroxyprednisolone  
†

*Lederle*

- ◊ a new high in anti-inflammatory effects with lower dosage  
(averages  $\frac{1}{3}$  less than prednisone)
- ◊ a new low in the collateral hormonal effects associated  
with all previous corticosteroids
  - ◊ No sodium or water retention
  - ◊ No potassium loss
  - ◊ No interference with psychic equilibrium
  - ◊ Lower incidence of peptic ulcer and osteoporosis

**BREWER** was first  
to make it twice-as-easy  
for your patient

# AMCHLOR

the First, Smallest, Most Preferred One Gram Enteric Coated Ammonium Chloride Tablet . . . easy-to-swallow . . . provides freedom from gastric irritation . . . 15 gr. instead of 7½ gr., reducing the number of tablets to be taken daily by half . . .

**Prescribe AMCHLOR by Brewer**  
for Cardiac Edema: Used alone (4 to 12 AMCHLORS daily) . . . or to potentiate mercurial diuretics (2 to 6 AMCHLORS daily).

**Prescribe AMCHLOR by Brewer**  
for Pre-menstrual Tension, Stilbestrol Nausea, Menieres Syndrome

*Brewer*  
EST. 1852

WORCESTER 8, MASSACHUSETTS, U.S.A.

recognized by its unique  
mottled green enteric coating  
supplied in bottles of  
100 and 500

Literature and samples will  
be mailed to you immediately  
on request



## Who Is This Doctor?

**H**E was born in France about 1494 and is universally admitted to be one of the world's great writers. He is still very much read today.

He was one of a merry band who played at Montpellier the roaring farce called *The Moral Comedy of Him who Espoused and Married a Dumb Wife*. He was also the learned editor of the *Medical Letters of Giovanni Manardi of Ferrara*, of Hippocrates and Galen, a renowned lecturer, a savant and one of the first anatomists in France to dissect the human body.

He early entered a monastery, studying first as a Franciscan (1519), and later as a Benedictine (1524), until he abandoned monasticism.

After studying law and wandering some years as a secular priest, he studied medicine (1530-32) at Montpellier, and practiced at Lyons and other cities. He had influential friends in the Bishop of Maillezais, Maurguerite of Navarre, and Cardinal du Bellay whose favor he long enjoyed and with whom he made several journeys to Rome. He passed his life partly in Italy and partly in Paris until 1550 when he was made Curé of Meudon.

He published a series of humorous satirical almanacs, one of which was entitled *Les Grandes et Inestimables Cronicques du Grand et Enorme Geant Gargantua*. Its success led him a few months later to compose a sequel featuring the hero's son, the King of the Dip-sodes, or Thirsty Ones. The two books were rewritten to form a complete and fantastic satire, and were published under the anagram Alcofribas Nasier. Other books followed.

In the five books completing this mammoth satire he covered the history of civilization through his characters, linking his work with all the social, political, religious, scientific, and even colonial pre-occupations of his age. He used a coarse and daring vocabulary, employing all manner of devices—puns, riddles, enigmas, and the medieval giant story—suiting his style to each change in subject. His literary work was regarded by him as a kind of therapeutic of laughter.

He left Meudon in 1552 and died, probably in 1553, in Paris.

Can you name this doctor and the famous characters by which his books are known without turning to page 130a?

*she needs support, too...*  
*during pregnancy and throughout lactation*

# NATABEC

KAPSEALS®

## VITAMIN-MINERAL COMBINATION

She balances her nutritional needs by adding to her diet NATABEC Kapseals prescribed by her physician. As a dietary supplement, NATABEC provides vitamins and minerals for nutritional support, helping to promote better present and future health for the mother and her child.

*Each NATABEC Kap seal contains*

Calcium carbonate	500 mg.
Iron tannate	150 mg.
Vitamin D	400 units
Vitamin B <sub>1</sub> (thiamine) concentrate	1 mg.
Vitamin B <sub>2</sub> (riboflavin)	2 mg.
Vitamin B <sub>6</sub> (crysophane)	5 mg.
Folic acid	1 mg.
Synkavit® (vitamin K) (as the hydrochloride)	0.5 mg.
Rutin	10 mg.
Nicotinamide (niacinamide)	10 mg.
Vitamin B <sub>5</sub> (pyridoxine hydrochloride)	3 mg.
Vitamin C (ascorbic acid)	50 mg.
Vitamin A	4,000 units
Ironistic factor concentrate	5 mg.

*dosage*

As a dietary supplement, during pregnancy and throughout lactation, one or more Kapseals daily. Available in bottles of 100 and 1,000.



PARKE, DAVIS & COMPANY

DETROIT 22, MICHIGAN



# IODIDE THERAPY



*without Iodism*

Full doses of iodide medication can be continued a year or longer with no apparent danger of iodism, provided you prescribe IODO-NIACIN.

Iodo-Niacin Tablets contain niacinamide hydroiodide 25 mg. with potassium iodide 135 mg. It has been established that niacinamide hydroiodide combats iodism by the same mechanism as that of niacin and niacinamide against pellagra<sup>1</sup>.

In a series of 59 cases of arteriosclerosis which were treated with Iodo-Niacin Tablets in full dosage over a period of more than a year, *there was not a single case of iodism*.

In urgent cases Iodo-Niacin Ampuls may be used for intramuscular or slow intravenous injection<sup>2</sup>.

The indications for Iodo-Niacin are the same as for potassium iodide; namely, arteriosclerosis, coronary sclerosis, angina pectoris, chronic bronchitis, bronchial asthma, sinusitis, simple colloid goiter, cretinism, hyperthyroidism, thyroid crisis, and preparation for thyroidectomy.

The average adult dosage is 2 tablets three or four times daily after meals, with half a glass of water. For children over six, 1 tablet. This dosage may be continued indefinitely with no apparent risk of iodism.

Supplied in bottles of 100 tablets, slosol-coated, pink.

**IDO-NIACIN\***

\* U.S. PATENT PENDING

*Cole*  
**CHEMICAL COMPANY**  
3721-27 Laclede Ave.  
St. Louis 8, Mo.

COLE CHEMICAL COMPANY  
3721-27 Laclede Ave.  
St. Louis 8, Mo.

MT-1

Gentlemen: Please send me professional literature and samples of IODO-NIACIN.

M.D.

STREET

CITY..... ZONE..... STATE.....

MEDICAL TIMES



# RIASOL

## FIRST CHOICE

### IN

# PSORIASIS

RIASOL\* heads the list of medications prescribed exclusively for psoriasis. This preference is based on the experience of thousands of physicians all over the nation.

RIASOL produces these results in the treatment of psoriasis:

1. Prompt relief of itching.
2. Disappearance of scales.
3. Fading of red patches.
4. Minimum recurrences.

**COMPOSITION:** Mercury 0.45% chemically combined with soaps, phenol 0.5% and cresol 0.75% in a washable, non-staining, odorless vehicle.

**DIRECTIONS:** To be applied daily after a mild soap bath and thorough drying. A thin, invisible, economical film suffices. No bandages needed. After one week, adjust to patient's progress.

**AVAILABILITY:** Supplied in 4 and 8 fl. oz. bottles, at pharmacies or direct. Ethically promoted.

\* T. M. Reg. U. S. Pat. Off.



BEFORE USE OF RIASOL



AFTER USE OF RIASOL



### Test RIASOL Yourself

May we send you professional literature and generous clinical package of RIASOL. No obligation. Write

**SHIELD LABORATORIES**

Dept. MT-158

12850 Mansfield Avenue, Detroit 27, Michigan

**RIASOL FOR PSORIASIS**



OF THOSE 107 PATIENTS YOU'LL SEE THIS WEEK\*



# 78

MAY DO BETTER  
IF  
YOU ADD

# VITERRA®

Each VITERRA capsule contains:

Vitamins

Vitamin A (Palmitate) .....	5,000 U.S.P. Units
Vitamin D (Irradiated Ergosterol) .....	500 U.S.P. Units
Vitamin B <sub>1</sub> U.S.P. .....	1 mcg.
Thiamin Hydrochloride U.S.P. .....	.3 mg.
Riboflavin U.S.P. .....	.3 mg.
Pyridoxine Hydrochloride U.S.P. .....	.05 mg.
Niacinamide U.S.P. .....	.25 mg.
Ascorbic Acid U.S.P. .....	.50 mg.
Calcium Pantothenate .....	.5 mg.
Vitamin E (from mixed tocopherols concentrate) .....	3.7 I.U.

Minerals

Calcium (from Dicalcium Phosphate) .....	213 mg.
Cobalt (from Cobaltous Sulfate) .....	0.1 mg.
Copper (from Cupric Sulfate) .....	1 mg.
Iodine (from Potassium Iodide) .....	0.15 mg.
Iron (from Ferrous Sulfate) .....	10 mg.
Manganese (from Manganous Sulfate) .....	1 mg.
Magnesium (from Magnesium Sulfate) .....	6 mg.
Molybdenum (from Sodium Molybdate) .....	0.2 mg.
Phosphorus (from Dicalcium Phosphate) .....	165 mg.
Potassium (from Potassium Sulfate) .....	5 mg.
Zinc (from Zinc Sulfate) .....	1.2 mg.

Dosage: usually one capsule daily.

Also available as VITERRA TASTITABS® (ideal for children) and VITERRA THERAPEUTIC (for high potencies).



New York 17, New York  
Division, Chas. Pfizer & Co., Inc.

# LETTERS

## To The Editor

This department is offered as an Open Forum for the discussion of topical medical issues. All letters must be signed. However, to protect the identity of writers who are invited to comment on controversial subjects, names will be omitted when requested.

### Smoking Survey

My attention has been called to the interesting article, "Doctors Have Changed Their Smoking Habits," in the issue of your journal for November, 1957 (p. 1211). This article contains statistics on the reported change in smoking habits of physicians, as disclosed in a questionnaire survey. On examining it, I do not find any statistics on the smoking rates themselves. In a study I am making it is important to have such rates. Would it be possible to obtain the cigarette smoking rates; that is, the percentage of persons who were cigarette smokers at the time of survey, by age in decades? I shall be grateful to you for this data.

JOSEPH BERKSON, M.D.  
Division of Biometry and  
Medical Statistics  
Mayo Clinic,  
Rochester, Minnesota

#### NON-SMOKERS

As a % of GP survey group = 32.12%

#### SMOKERS

As a % of GP survey group = 67.79%

Age Group	% of Age Group who were smokers (each group = 100%)	Age Group (% of all GPs in survey)
20-29	91.67%	3.11%
30-39	75.22	29.27
40-49	74.19	40.16
50-59	49.40	21.50
60-69	47.62	5.44
70 & over	0.0	.52

(Vol. 86, No. 1) January 1958

for the peak  
of analgesic efficiency

# DILAUDID

brand of DIHYDROMORPHINONE

### Dosage Forms

#### Dilauidid hydrochloride:

Ampules: 1 cc., 2 mg. and  
3 mg. each.

Hypodermic Tablets: 2, 3  
and 4 mg. each.

Oral Tablets: 2.7 mg. each.

Multiple Dose Vial: 10 cc.  
2 mg. Dilauidid sulfate per  
cc.

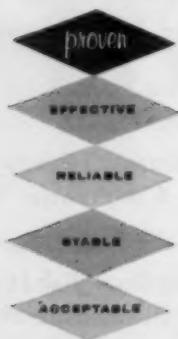
\* Subject to Federal narcotic regulations  
Dilauidid®, E. Bilhuber, Inc.

KNOLL PHARMACEUTICAL CO.  
Orange, New Jersey

**simplicity with security**



when the 'jelly-alone' method is advised, **NEW Koromex** the outstandingly competent spermatocidic agent.... is now available to physicians.



**AVAILABILITY, ANOTHER H-R "FIRST".**  
Large tube of Koromex vaginal jelly, 125 grams, with potentiated measured dose applicator, is supplied in a washable, appealingly feminine zippered kit, at no extra charge, for home storage.

The 125 gram tube of Koromex may also be bought separately at any time.

ACTIVE INGREDIENTS:  
IN A SPECIAL BARRIER TYPE BASE  
Boric Acid ..... 2.0%  
Potassium Sulfate ..... 0.5%  
Phenylmercuric Acetate ..... 0.02%  
Fuchsin literature sent upon request.

HOLLAND-RANTOS CO., INC. • 145 HUDSON STREET, NEW YORK 13, N.Y.

For most effective tetracycline therapy...



"...an ultimate rep-

most effective

line

every clinical  
consideration  
recommends

# Tetrex®

THE ORIGINAL TETRACYCLINE PHOSPHATE COMPLEX

replacement for the older tetracycline HCl™



# Tetrex®

U.S. PAT. NO. 2,791,609  
THE ORIGINAL TETRACYCLINE PHOSPHATE COMPLEX

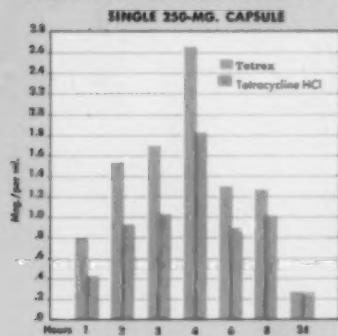
- Significant tetracycline serum levels for 24 hours on a single intramuscular dose<sup>3,6</sup>
- Faster, higher, more prolonged tetracycline serum levels for earlier and more certain control of infection<sup>1,2,5,7-13</sup>
- A single, pure antibiotic (not a mixture)
- Clinically "sodium-free"<sup>1,2</sup>
- Equally effective orally, b.i.d. or q.i.d.<sup>2,7,9</sup>
- A convenient dosage form for every member of the family





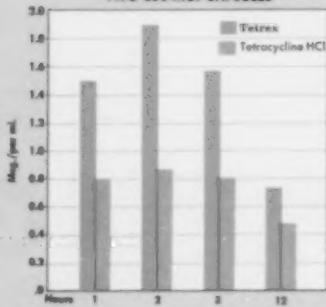
**Absorption studies show:  
Faster, higher, more prolonged tetracycline serum levels**

**After oral administration—**



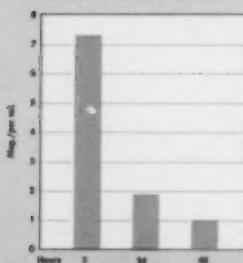
A composite of three separate absorption studies: serum levels "substantially higher"<sup>12</sup> or "markedly higher"<sup>13</sup> than with tetracycline HCl, and absorption "about twice as efficient."<sup>15</sup>

**TWO 250-MG. CAPSULES**

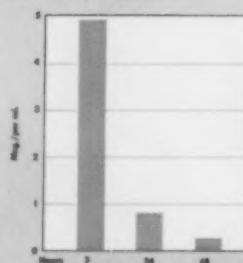


Average serum levels after administration of a single 500-mg. dose: "approximately twice as great" as those of a group receiving an equivalent dose of tetracycline HCl.<sup>11</sup>

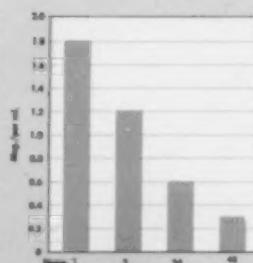
**After intramuscular administration—**



Median tetracycline serum levels following intramuscular injection of TETREX in newborn infants.<sup>6</sup> Dose: 25 mg./Kg. "Therapeutic" levels for at least 24 hours.



Median tetracycline serum levels following intramuscular injection of TETREX in young children.<sup>6</sup> Dose: 15 to 25 mg./Kg. "Surprisingly high" levels at 3 and 24 hours.



Average serum levels following intramuscular injection of a single 250-mg. dose in geriatric patients.<sup>3</sup> "Adequate" amounts of tetracycline activity present after 24 hours.

*Rx*  
A suitable TETREX  
dosage form for every  
member of the family

*...an improvement  
and an ultimate replacement  
for the older tetracycline  
hydrochloride" 2*

# Tetrex®

THE ORIGINAL TETRACYCLINE PHOSPHATE COMPLEX

**Clinically proven**—It has been determined that "blood concentrations correlate well with clinical response."<sup>4</sup> In clinical studies, the assurance that TETREX "would be more effective [than tetracycline HCl] in treating infections due to susceptible organisms"<sup>11</sup> has been fully confirmed.

Typically, when TETREX was administered to 686 patients in two studies, "all patients infected with tetracycline-sensitive organisms responded satisfactorily to therapy."<sup>1,2</sup>

A "remarkably low incidence of side reactions"<sup>11</sup> has been reported. In four studies involving 480 patients, for instance, side effects were so negligible as to require withdrawal of therapy in only 2 cases.<sup>1,7,9,10</sup>

**TETREX Capsules**  
Tetracycline phosphate complex—each capsule equivalent to 250 mg. tetracycline HCl activity.

**TETREX  
Pediatric Capsules**  
Tetracycline phosphate complex—each capsule equivalent to 100 mg. tetracycline HCl activity.

**TETREX  
Intramuscular '250'  
with Xylocaine\***  
Tetracycline phosphate complex—each vial equivalent to 250 mg. tetracycline HCl activity.

**TETREX  
Intramuscular '100'  
with Xylocaine\***  
Tetracycline phosphate complex—each vial equivalent to 100 mg. tetracycline HCl activity.  
\*© of Astra Pharm. Prod. Inc.  
for lidocaine

**TETREX Syrup**  
Tetracycline (phosphate buffered) Syrup—each 5-cc. tsp. equivalent to 125 mg. tetracycline HCl activity.

**TETREX  
Pediatric Drops**  
Tetracycline (phosphate buffered) Syrup—each cc. equivalent to 100 mg. tetracycline HCl activity.

**TETREX-APC with  
BRISTAMIN® Capsules**  
Tetracycline phosphate complex—each capsule equivalent to 125 mg. tetracycline HCl activity, plus phenyltoloxamine and APC.

*Available for your  
prescription at all  
leading pharmacies*

**BRISTOL LABORATORIES INC., SYRACUSE, NEW YORK**

**References:**

1. Cronk, G. A., and Naumann, D. E.: *Ant. Med. & Clin. Ther.* 4:166, 1957.
2. Cronk, G. A., Naumann, D. E., and Casson, K.: *Fifth Annual Symposium on Antibiotics*, Washington, D.C., Oct. 2-4, 1957.
3. Dube, A. H.: *Ibid.* 4. Flippin, H. F., and Eisenberg, G. M.: *Antimicrobial Therapy in Medical Practice*, Davis, Philadelphia, 1955, p. 57.
4. Kaplan, M. A., Dickinson, H. E., Huber, J. A., and Buckwalter, F. M.: *Ant. Med. & Clin. Ther.* 4:99, 1957.
5. Portnoy, E., Draper, T., and Welch, W. F.: *Fifth Annual Symposium on Antibiotics*, Washington, D.C., Oct. 2-4, 1957.
6. Prinot, A., Shidlovsky, B. A., and Felix, A. J.: *Ant. Med. & Clin. Ther.* 4:487, 1957.
7. Prinot, A., Shidlovsky, B. A., and Isokane, R. K.: *Ant. Med. & Clin. Ther.* 4:408, 1957.
8. Putnam, L. E.: *Ant. Med. & Clin. Ther.* 4:470, 1957.
9. Rein, C. R., and Fleischmajer, R.: *Ant. Med. & Clin. Ther.* 4:422, 1957.
10. Shidlovsky, B. A., Prinot, A., Maynard, A. d L., Felix, A. J., and Hell-Harvey, I.: *Fifth Annual Symposium on Antibiotics*, Washington, D.C., Oct. 2-4, 1957.
11. Trafton, H. M., and Lind, H. E.: *Ibid.* 13. Welch, H., Lewis, C. N., Staffa, A. W., and Wright, W. W.: *Ant. Med. & Clin. Ther.* 4:215, 1957.



"...an improvement  
and an ultimate replacement  
for the older tetracycline  
hydrochloride" <sup>2</sup>

# Tetrex®

U. S. PAT. NO. 2,791,608  
THE ORIGINAL TETRACYCLINE PHOSPHATE COMPLEX

- **Significant tetracycline serum levels for 24 hours on a single intramuscular dose<sup>3,6</sup>**
- **Faster, higher, more prolonged tetracycline serum levels for earlier and more certain control of infection<sup>1,2,5,7-13</sup>**
- **A single, pure antibiotic (not a mixture)**
- **Clinically "sodium-free"<sup>2,7</sup>**
- **Equally effective orally, b.i.d. or q.i.d.<sup>2,7,9</sup>**
- **A convenient dosage form for every member of the family**

Bristol

RING BELL  
AND  
WALK IN

She returns to report . . .

full antacid benefits

**-no  
antacid  
penalties**



After you prescribe ALUDROX, you can expect to enter such a report as this in your follow-up record: "Acid neutralization free of drawbacks." For ALUDROX avoids systemic or other handicaps. It avoids laxation (its content of milk of magnesia is right). It avoids constipation (its content of aluminum hydroxide is right). It avoids alkalosis. It avoids acid rebound. And it solves the problem of taste resistance.

In short, ALUDROX outmodes trouble-making antacids. Fresh-flavored, smooth-textured, it encourages patient co-operation. Its formula (one part milk of magnesia, four parts aluminum hydroxide) is the choice of many physicians for fast and prolonged acid neutralization, constipation-inhibiting action, and soothing protection. ALUDROX keeps antacid trouble out of your practice.

TABLETS

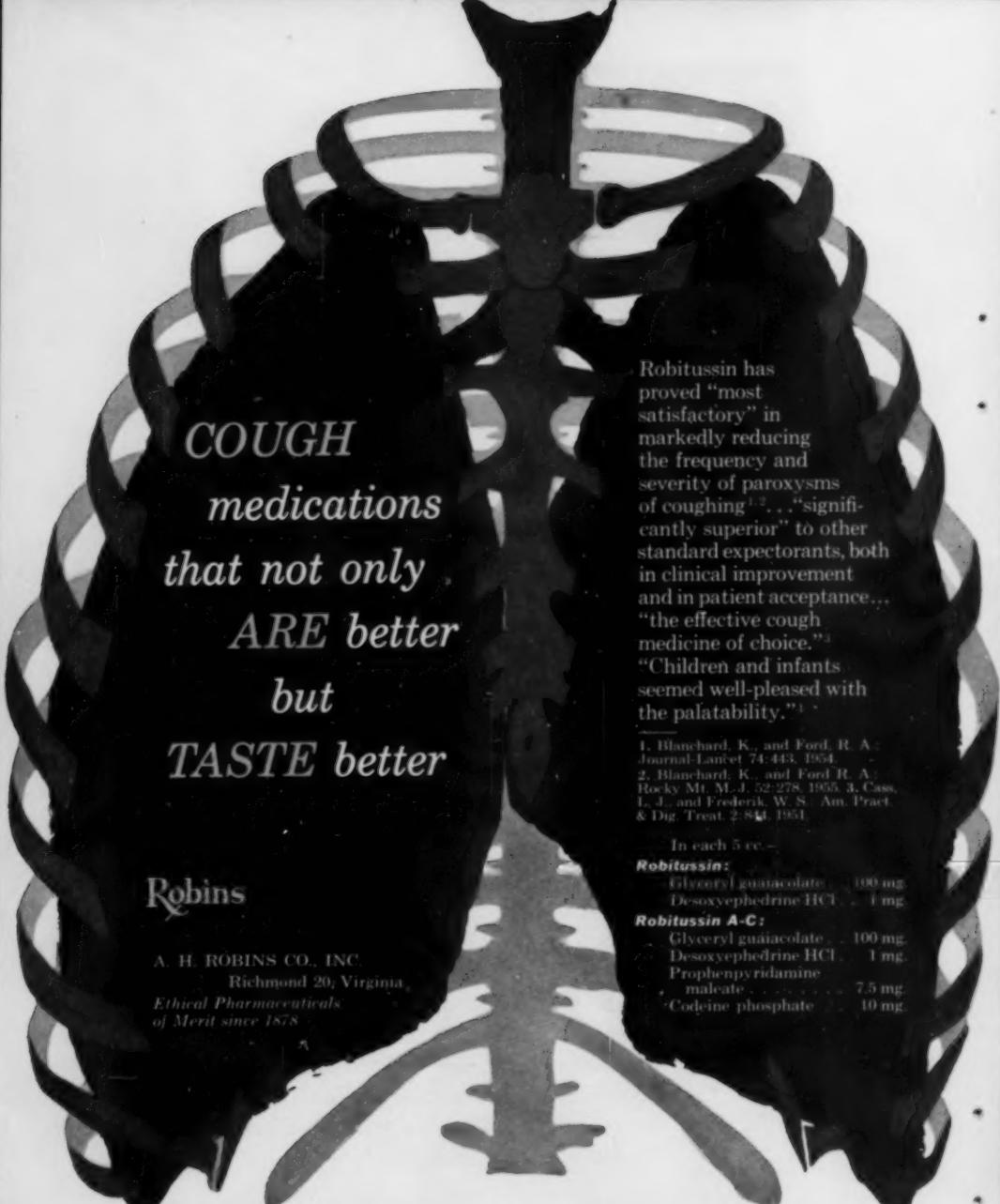
**ALUDROX®**

Aluminum Hydroxide with Magnesium Hydroxide

SUSPENSION

**Wyeth**  
Philadelphia 1, Pa.

to neutralize.  
not penalize



**COUGH**  
*medications*  
*that not only*  
**ARE better**  
*but*  
**TAKE better**

**Robins**

A. H. ROBINS CO., INC.  
Richmond 20, Virginia  
Ethical Pharmaceuticals  
of Merit since 1878

Robitussin has proved "most satisfactory" in markedly reducing the frequency and severity of paroxysms of coughing<sup>1,2</sup>... "significantly superior" to other standard expectorants, both in clinical improvement and in patient acceptance... "the effective cough medicine of choice."<sup>3</sup> "Children and infants seemed well-pleased with the palatability."<sup>3</sup>

1. Blanchard, K., and Ford, R. A.: Journal-Lancet 74:443, 1954.  
2. Blanchard, K., and Ford, R. A.: Rocky Mt. M. J. 52:278, 1955. 3. Cass, L. J., and Frederik, W. S.: Am. Pract. & Dig. Treat. 2:844, 1951.

In each 5 cc.:

<b>Robitussin:</b>	
Glyceryl guaiacolate	100 mg.
Desoxyephedrine HCl	1 mg.
<b>Robitussin A-C:</b>	
Glyceryl guaiacolate	100 mg.
Desoxyephedrine HCl	1 mg.
Prophenylyramine maleate	7.5 mg.
Codeine phosphate	10 mg.

**Robitussin®**  
or **Robitussin® A-C**

Robitussin with Antihistamine and Codeine



## Mediquiz

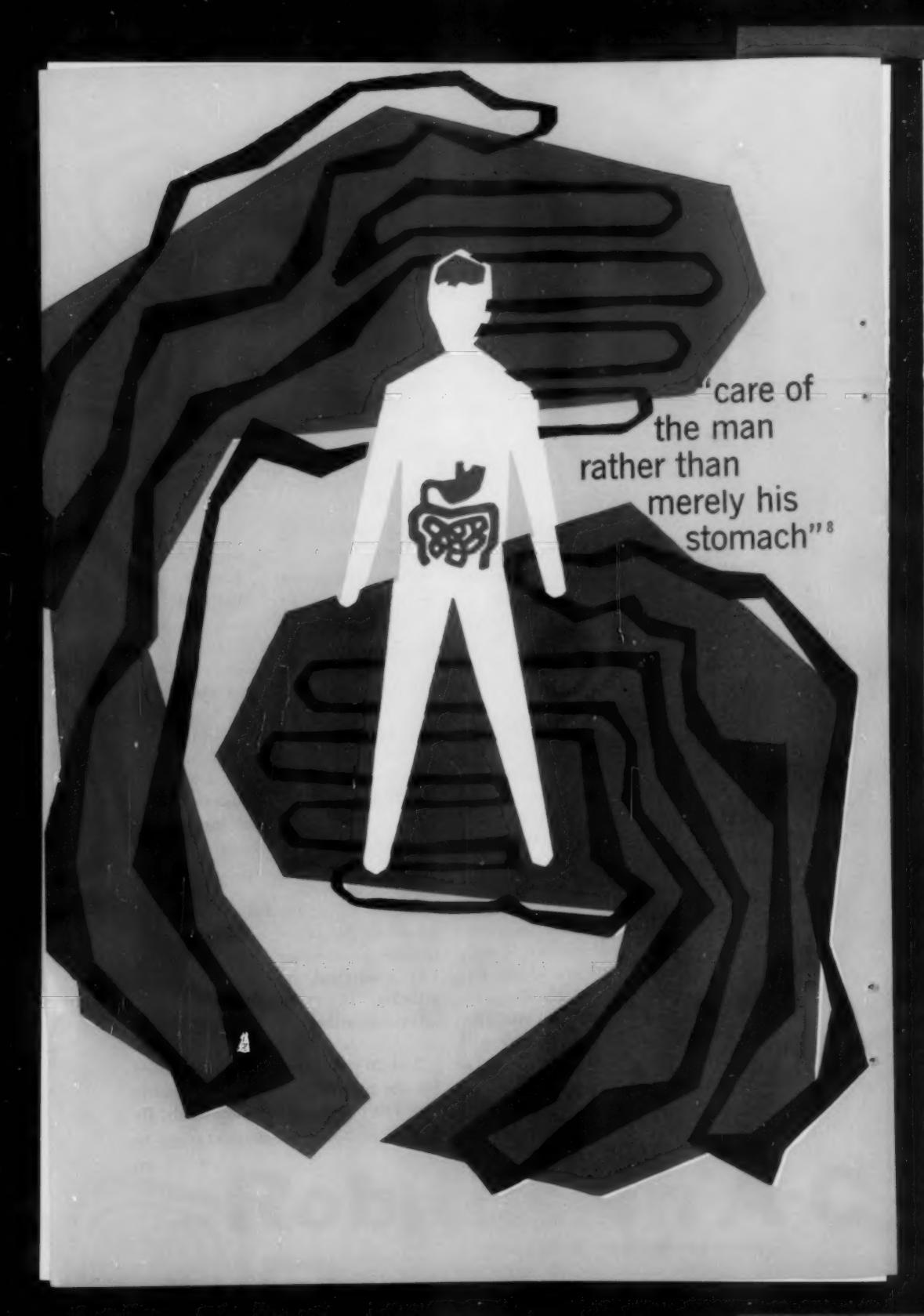
*These questions are from a civil service examination recently given to candidates for physician appointments in municipal government. Like to see how you would fare? Answers will be found on page 81a.*

1. In primary atypical (presumably viral) pneumonia the one of the following blood findings that is common is: (A) leucocytosis; (B) agglutination of sheep's red cells by the patient's blood serum; (C) cold agglutinins in the serum; (D) secondary anemia.
2. In simple acute tuberculosis pleurisy with effusion, the one of the following findings which is characteristic upon physical examination is: (A) bronchophony; (B) increase of vocal fremitus; (C) egophony; (D) succussion splash.
3. In a patient who has retrosternal pain and is found to have acute swelling with crepitus of the soft tissues above the clavicle, the one of the following which is the probable diagnosis is: (A) retropharyngeal abscess; (B) rupture of the pericardium; (C) mediastinal emphysema; (D) ruptured gastric ulcer.
4. In acute diaphragmatic pleurisy

involving the central part of the diaphragm, the patient is likely to complain of pain in: (A) neck and shoulder; (B) lateral part of the chest between the third and sixth ribs; (C) center of the chest between the second and fifth ribs; (D) interscapular region.

5. In acute tuberculosis lobar pneumonia the finding which is typical is: (A) blood leucocytes below 4,000; (B) blood leucocytes between 4,000 and 10,000; (C) blood leucocytes between 10,000 and 20,000; (D) blood leucocytes above 20,000.
6. The one of the following diseases involving the joints, of which subcutaneous nodules are characteristic is: (A) gonorrhreal arthritis; (B) osteoarthritis; (C) rheumatic fever; (D) tubercular arthritis.
7. A 26 year old male has complained for the past three weeks of epigastric pain two to three hours after meals. He

—Continued on page 73a



"care of  
the man  
rather than  
merely his  
stomach"<sup>8</sup>

# "Milpath"

Miltown®  anticholinergic

## two-level control of gastrointestinal dysfunction

### at the central level

The tranquilizer Miltown® reduces anxiety and tension.<sup>1,3,6,7</sup>

Unlike the barbiturates, it does not impair mental or physical efficiency.<sup>5,7</sup>

### at the peripheral level

The anticholinergic tridihexethyl iodide reduces hypermotility and hypersecretion.

Unlike the belladonna alkaloids, it rarely produces dry mouth or blurred vision.<sup>2,4</sup>

**indications:** peptic ulcer, spastic and irritable colon, esophageal spasm, G. I. symptoms of anxiety states.

### each "Milpath" tablet contains:

Miltown® (meprobamate WALLACE) ..... 400 mg.  
(2-methyl-2-n-propyl-1,3-propanediol dicarbamate)

Tridihexethyl iodide ..... 25 mg.  
(3-diethylamino-1-cyclohexyl-1-phenyl-1-propanol-ethiodide)

**dosage:** 1 tablet t.i.d. at mealtime and 2 tablets at bedtime.

**available:** bottles of 50 scored tablets.

### references:

1. Altshul, A. and Billow, B.: The clinical use of meprobamate (Miltown®). *New York J. Med.* 57:2361, July 15, 1957.
2. Atwater, J. S.: The use of anticholinergic agents in peptic ulcer therapy. *J. M. A. Georgia* 45:421, Oct. 1956.
3. Borrus, J. C.: Study of effect of Miltown (2-methyl-2-n-propyl-1,3-propanediol dicarbamate) on psychiatric states. *J. A. M. A.* 157:1596, April 30, 1955.
4. Cayer, D.: Prolonged anticholinergic therapy of duodenal ulcer. *Am. J. Digest. Dis.* 1:301, July 1956.
5. Marquis, D. G., Kelly, E. L., Miller, J. G., Gerard, R. W. and Rapoport, A.: Experimental studies of behavioral effects of meprobamate on normal subjects. *Ann. New York Acad. Sc.* 67:701, May 9, 1957.
6. Phillips, R. E.: Use of meprobamate (Miltown®) for the treatment of emotional disorders. *Am. Pract. & Digest Treat.* 7:1573, Oct. 1956.
7. Selling, L. S.: A clinical study of Miltown®, a new tranquilizing agent. *J. Clin. & Exper. Psychopath.* 17:7, March 1956.
8. Wolf, S. and Wolff, H. G.: *Human Gastric Function*. Oxford University Press, New York, 1947.



**WALLACE LABORATORIES**

New Brunswick, N. J.

in  
pyelonephritis  
delay is  
dangerous...



30 min.  
antibacterial  
concentrations in urine  
24 hrs.  
turbid urine frequently clear  
3 days  
most patients  
symptom-free

**FURADANTIN®**

BRAND OF NITROFURANTOIN

*first...*  
for rapid eradication of infection

In the majority of 112 cases of acute, persistent or relapsing urinary tract infections "nitrofurantoin [FURADANTIN] was effective clinically, with a pronounced improvement, indicated by the appearance of the urine as well as by verbal commendation by the patient, within 24 to 36 hours . . . Some of these patients with seemingly impossible cases were cured of their infection."\*

FURADANTIN *first* because of these advantages: a specific for urinary tract infections • rapid bactericidal action • negligible development of bacterial resistance • nontoxic to kidneys, liver and blood-forming organs.

AVERAGE DOSAGE: ADULTS—four 100 mg. tablets daily; 1 tablet during each meal and 1 on retiring, with food or milk. In acute, uncomplicated infections, 50 mg. q.i.d. may be prescribed. If patient is unresponsive after 2 to 3 days, increase dose to 100 mg. q.i.d.

CHILDREN—5 to 7 mg. per Kg. (2.2 to 3.1 mg. per lb.) per 24 hours.

SUPPLIED: Tablets, 50 and 100 mg. Oral Suspension (25 mg. per 5 cc. tsp.).

\*Stewart, B. L., and Rowe, H. J.: J. Am. M. Ass. 160:1221, 1956.



EATON LABORATORIES, NORWICH, NEW YORK

Nitrofurans—a new class of antimicrobials—neither antibiotics nor sulfonamides

is relieved of pain by food and alkalis but has pain during the night. For the past week he has been vomiting, chiefly at night. Gastrointestinal x-ray series reveal a small ulcer niche at the pylorus with considerable five-hour and some twenty-four hour gastric retention. The preferred initial treatment is a: (A) transthoracic vagotomy; (B) posterior gastroenterostomy; (C) gastric resection and gastro-jejunostomy; (D) medical regimen consisting of decompression of stomach at night and a modified form of "stenosis diet."

8. A suspected obstruction of the descending colon is best visualized by: (A) plain prone film of the abdomen; (B) a gastrointestinal series; (C) sigmoidoscopy; (D) barium enema.

9. In a gastrointestinal x-ray series an enlargement of the duodenal sweep with displacement downward and to the right is often significant of: (A) anomalous position of the stomach; (B) tumor of head of pancreas; (C) partial obstruction of jejunum; (D) enlargement of the left lobe of the liver.

10. Radioactive phosphorus has been found useful in the treatment of certain diseases. The one of the following diseases in which it is of no use is: (A) acute myelogenous leukemia; (B) chronic myelogenous leukemia; (C) chronic lymphatic leukemia; (D) polycythemia vera.

11. BAL (British Anti-Lewisite) is used to counteract the toxic effects of:

(A) atropine; (B) mercury; (C) morphine; (D) barbiturates.

12. A 57 year old patient presents the following symptoms: for several months he had noticed weakness, sore tongue, acroparesthesia and diarrhea. Examination reveals pallor, absence of position and vibration sensation in the feet and an atrophic tongue. Blood count shows a macrocytic anemia. The one of the following which will cause the best response of reticulocytosis is: (A) folic acid 20 mgm daily; (B) ferrous sulphate 2 gm daily; (C) thiamin chloride 100 mgm daily; (D) transfusion of whole blood 500 cc daily.

13. Charcot triad consists of: (A) nystagmus, scanning speech, intention tremor; (B) dysarthria, dysphagia, acroparesthesias; (C) paraplegia, vesical difficulty, amblyopia; (D) pain, temperature dissociation, weakness, hyperactive reflexes.

14. A patient has a history of hay fever beginning each year about August 15th. Skin tests show he is equally sensitive to giant ragweed, oak pollen, timothy. A course of treatment is planned with antigens. The one of the following courses which is most accepted is a course of: (A) ragweed alone; (B) oak alone; (C) timothy alone; (D) the three in combination.

15. The one of the following findings which would most likely be associated with chronic alcoholism is: (A) bi-

# IMPROVED NUTRITION

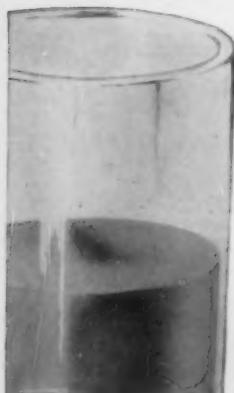
especially for SENIOR CITIZENS...



LIXATONE Geriatric Elixir (Buffington's) is a far-reaching dietary supplement with built-in protein and fat assimilators. It provides therapeutic amounts of essential B-vitamin factors, including vitamin B12 and folic acid. Its lysine content facilitates the assimilation of protein from vegetable sources, and the inclusion of betaine, choline and inositol promotes the metabolism and utilization of fats.

These important features combine to make LIXATONE Geriatric Elixir (Buffington's) a preferred agent when caring for patients of advanced age, where low vitamin diets are so common, and where cereals are so often substituted for animal sources of protein.

LIXATONE Geriatric Elixir (Buffington's) tastes good to discriminating palates of all ages. It is water-miscible, and may be given in fruit juice to ensure adequate vitamin C levels. Adult dose: 2 teaspoonfuls, in water or fruit juice, 3 times daily, either before or during any meal.



## LIXATONE

GERIATRIC ELIXIR (BUFFINGTON'S)

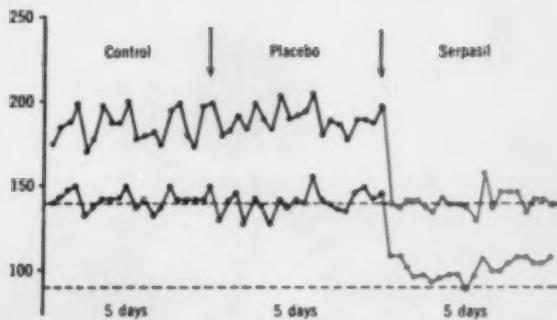
Each 30 cc contains: Liver fraction 1, 750 mg.; betaine HCl, 100 mg.; choline (as tricholine citrate), 180 mg.; inositol, 180 mg.; L-lysine monohydrochloride, 300 mg.; vitamin B12 crystalline, 30 mcg.; thiamine HCl, 18 mg.; pyridoxine hydrochloride, 18 mg.; niacinamide, 72 mg.; pyridoxal HCl, 3 mg.; calcium pantothenate, 12 mg.; folic acid (in suspension), 1.5 mg.; alcohol, 10%.

For professional sample  
and descriptive literature,  
write to —



BUFFINGTON'S, INC.  
Worcester 8, Mass., U.S.A.

first thought for high b.p.\*

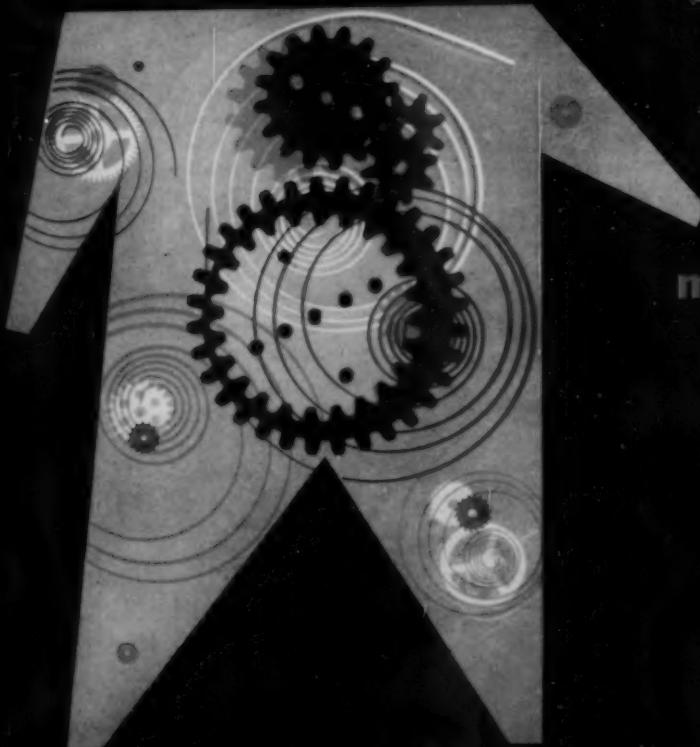


\*

Chart shows actual response to Serpasil in a patient with benign essential hypertension (data on request). Consider Serpasil® (reserpine CIBA) (1) alone to lower blood pressure gradually and safely in most cases of mild to moderate hypertension; (2) as a primer in severe hypertension before more potent drugs are introduced; (3) as a background agent in all grades of hypertension to permit lower dosage and thus minimize side effects of other antihypertensives.

C I B A

# man motion & medicine a new horizon in therapy



metabol'aid

Twenty years of research and two years of clinical application are behind this announcement. Now — significant clinical evidence introduces a new era in therapy that utilizes "motion in medicine."

The discovery of the therapeutic effects of motion in medicine was sparked by a simple, everyday observation. For many years physicians have utilized diagnostic instruments such as stethoscopes, fluoroscopes, electrocardiographs, electromyographs, etc., to measure variations of rhythm or motion in the human body. Motion in medicine is the simple and natural process of carrying these diagnostic principles into the therapeutic range of usefulness.

Reports from two years of studies conducted in major hospitals and medical schools demonstrate that when scientifically measured motion is induced into the patient there is: significant reduction of blood sugars in many diabetic patients...marked lowering of blood pressures in most hypertensive patients...early symptomatic relief from pain in osteoarthritis...pronounced circulatory assistance...functional improvement in certain metabolic disorders.

The device used in each of these studies was a Metabol'aid, a precision mechanical apparatus that gently induces scientifically measured rhythmic motion, similar to auto-massage, into any prescribed area or areas of the body.

Metabol'aid is designed for regular daily use in home, office, hospital or clinic.

*Metabol'aid is available to the patient only upon prescription.*

## **diabetes - hypertension - arthritis**

m  
a

CLINICAL REPORTS AND BROCHURE UPON REQUEST

METABOL' AID: 1919 VINEBURN AVENUE, LOS ANGELES 32, CALIFORNIA

when you encounter

- respiratory infections
- gastrointestinal infections
- genitourinary infections
- miscellaneous infections

for all  
tetracycline-amenable  
infections,  
prescribe superior

# SUMYCIN

Squibb Tetracycline Phosphate Complex

*In your patients, SUMYCIN produces:*

1. Superior initial tetracycline blood levels—faster and higher than ever before—assuring fast transport of adequate tetracycline to the site of the infection.
2. High degree of freedom from annoying or therapy-interrupting side effects.

**SQUIBB**



*Squibb Quality—  
the Priceless Ingredient*

*Tetracycline phosphate  
complex equiv. to  
tetracycline HCl (mg.)*

Supply:	Tetracycline phosphate complex equiv. to tetracycline HCl (mg.)	Packaging:
Sumycin Capsules (per Capsule)	250	Bottles of 16 and 100
Sumycin Suspension (per 5 cc.)	125	2 oz. bottles
Sumycin Pediatric Drops (per cc.—20 drops)	100	10 cc. dropper bottles

\*SUMYCIN\* IS A SQUIBB TRADEMARK

*an oxazine...not an amphetamine  
appetite curbed...  
sleep undisturbed*



3 31 30 29 28 27 26 25 24 23 22 21

# PRELUDIN

(brand of phenmetrazine hydrochloride)

*developed specifically  
for appetite suppression*

Chemically different from the amphetamines,  
PRELUDIN provides potent appetite suppression with little  
or no central stimulation.

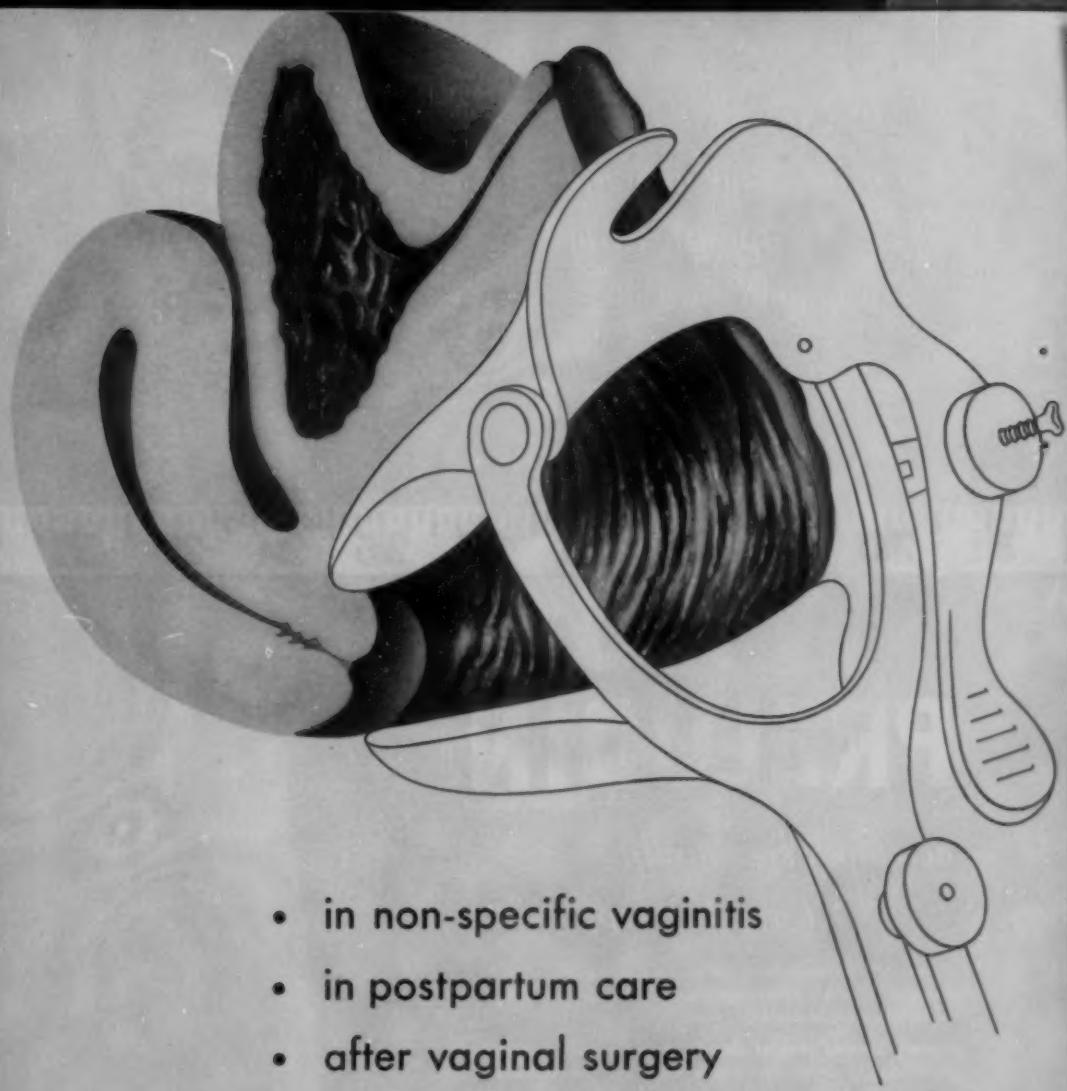
- **rarely causes loss of sleep**—may be given late enough  
in the day to curtail after-dinner "nibbling," yet not hinder sleep.
- **avoids nervous tension and "jitters"**<sup>1,2</sup>—simultaneous  
sedation is not required.<sup>3</sup>

"...in clinical use the side-effects of nervousness,  
hyperexcitability, euphoria, and insomnia are much less than  
with the amphetamine compounds and rarely cause difficulty."<sup>4</sup>

References: (1) Gelvin, E. P., McGovern, T. H., and Konigsberg, S.: Am. J. Digest. Dis. 1:155, 1956; (2) Holt, J. O. S., Jr.: Dallas M. J. 47:497, 1956;  
(3) Norenden, A. L.: Am. Pract. & Digest. Treat. 7:1456, 1956; (4) Council on  
Pharmacy and Chemistry, New and Nonofficial Remedies: J.A.M.A.,  
183:356 (Feb. 2) 1957.

PRELUDIN® (brand of phenmetrazine hydrochloride). Scored, square, pink  
tablets of 25 mg. Under license from C. H. Boehringer Sohn, Ingelheim.

**GEIGY** Ardsley, New York



- in non-specific vaginitis
- in postpartum care
- after vaginal surgery

# Triple Sulfa Cream

TRADEMARK



lateral wrist drop; (B) bilateral foot drop; (C) a combination of A and B; (D) unilateral foot drop.

16. The average duration of action of a dose of protamine zinc insulin is: (A) one-half hour to one hour; (B) four to six hours; (C) twenty to twenty-four hours; (D) twelve to sixteen hours.

17. The majority of cases of obesity in adults are due to: (A) overeating (exogenous) as to total caloric needs; (B) thyroid deficiency; (C) pituitary deficiency; (D) excess carbohydrate ingestion without excessive caloric intake.

18. Death of patients with essential hypertension is most frequently caused by disease of the: (A) heart; (B) brain; (C) kidneys; (D) lungs.

19. The congenital defect with which diastolic hypertension is most frequently associated is: (A) persistent ductus arteriosus; (B) pulmonary stenosis; (C) coarctation of the aorta; (D) ventricular septal defect.

20. A ureterocele is formed as a result of a: (A) diverticulum of the wall of the ureter; (B) prolapse of the vesical end of the ureter into the bladder; (C) tumor of the ureter; (D) cystic formation of the ureteral wall of the mid-portion of the ureter.

21. Hematuria is typically present in: (A) bichloride of mercury injury to the kidneys; (B) acute diffuse glomerulonephritis; (C) toxemia of pregnancy; (D) acute pyelonephritis.

22. A deep cut through the triceps muscle was followed by inability to extend the hand and fingers. This disability was due to: (A) radial nerve injury; (B) musculocutaneous nerve injury; (C) triceps muscle paralysis; (D) radial artery vasospasm.

23. Shortly after having been stabbed in the head by an icepick, a man has no localized complaints and no abnormal physical findings except for a fresh punctured wound high in the right temple. X-rays showed a few small fragments of bone at the site of injury, nearly an inch inside the skull. Of the following, the best treatment is: (A) local application to the wound of antiseptic solution; (B) debridement and suturing of scalp wound only; (C) irrigation of the wound with penicillin solution; (D) formal craniotomy for removal of the small bone chips.

24. The one of the following which is the best treatment for the condition described in question 20 is: (A) administration of caffeine sodium benzoate and oxygen; (B) trephination; (C) intravenous hypertonic glucose; (D) lumbar puncture.

#### "MEDIQUIZ ANSWERS"

1 (C), 2 (C), 3 (C), 4 (A), 5 (C), 6 (C), 7 (D), 8 (D), 9 (B), 10 (A), 11 (B), 12 (A), 13 (A), 14 (A), 15 (B), 16 (C), 17 (A), 18 (A), 19 (C), 20 (B), 21 (B), 22 (A), 23 (D), 24 (B).



# flu asiatic or american?

Whether the patient's influenza originated in Asia, Albuquerque or Akron, current authoritative recommendations are that it requires symptomatic treatment plus bed rest.

Let the analgesic and decongestive effectiveness of Numotizine be your mainstay in relieving the discomforting chest congestion of flu, as well as colds, tonsillitis and other respiratory conditions.

## **NUMOTIZINE<sup>®</sup>**

Analgesic Decongestive Cataplasma

A single application lasts 8 hours or more, after which time it may be conveniently replaced with a fresh application.

Numotizine contains guaiacol, beechwood creosote and methyl salicylate in an improved polyol-kaolin base. Supplied in 4, 8, 15 and 30 oz. jars.

**HOBART LABORATORIES, INC. • Chicago 10, Illinois**

**Three steps are necessary—**

**in establishing correct eating patterns**

supervision by the physician<sup>1,2</sup>

a balanced eating plan<sup>3,4</sup>

selective medication<sup>5,6</sup>

# Obedrin®

and the 60-10-70 Basic Plan

Following the establishment of desired eating patterns—the maintenance of the acquired habits is most important. Here, Obedrin and the 60-10-70 Plan can be valuable aids to both the physician and patient.

**Obedrin provides:**

- Methamphetamine for its proven anorexigenic and mood-lifting effects.
- Pentobarbital as a balancing agent, to guard against excitation.
- Vitamins B<sub>1</sub> and B<sub>3</sub> plus niacin to supplement the diet.
- Ascorbic acid to aid in the mobilization of tissue fluids.

**Formula:**

Semoxydine® HCl (Methamphetamine HCl)	5 mg.
Pentobarbital	20 mg.
Ascorbic Acid	100 mg.
Thiamine Mononitrate	0.5 mg.
Riboflavin	1 mg.
Niacin	5 mg.

1. Blachier, H.W.: *Am Pract. & Dig. Treat.* 6:770 (Oct. 1944).

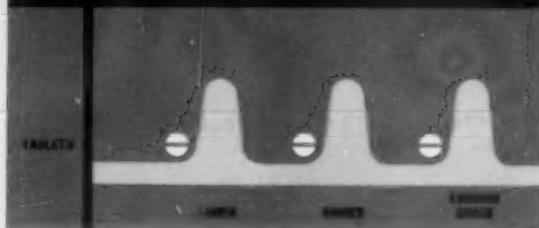
2. Freed, S.C.: *C.P.* 7:68 (1948).

3. Sherman, R.J.: *Medical Times*, 80:107 (Feb. 1948).

**THE S. E. MASSENGILL COMPANY**

Bristol, Tennessee • New York • Kansas City • San Francisco

**A flexible dosage form  
for predictable effect**



Obedrin tablets provide a flexible dosage form which may be prescribed to depress the appetite at peak hunger periods. The pentobarbital content assures minimal central nervous stimulation, and the 60-10-70 Basic Plan provides for a balanced food intake with sufficient protein and roughage.

**Advantages of Obedrin**

- An effective anorexigenic agent
- A flexible dosage form
- Minimal central nervous stimulation
- Vitamins to supplement the diet
- No hazards of impaction

**Obedrin®**

and the 60-10-70 Basic Plan



Currently, mailings will be forwarded only at your request. Write for 60-10-70 menus, weight charts, and samples of Obedrin.

**THE S. E. MASSENGILL COMPANY**

Bristol, Tennessee • New York • Kansas City • San Francisco



## "Systolic" Sylvester

—always just about at the "boiling point"—he never gives his blood-pressure a chance to normalize. To ease the tension out of his system and keep him on a tranquil keel, the time-proved "daytime sedative"—

BUTISOL SODIUM®—is a wise choice.

**BUTISOL SODIUM®**

BUTABARBITAL SODIUM

**McNEIL**

LABORATORIES, INC.  
PHILADELPHIA, PA.

TABLETS, 30 mg. (1/2 gr.), 50 mg. (1/4 gr.), 50 mg. (1/2 gr.), 100 mg. (1 1/2 gr.), R-A (Repeat Action)  
30 mg. and 60 mg.

ELIXIR, 50 mg. (1 gr.) per 5 oz.

CAPSULES

100 mg. (1 1/2 gr.)

## MODERN MEDICINALS

These brief résumés of essential information on the newer medicinals, which are not yet listed in the various reference books, can be pasted on file cards and a record kept. This file can be kept by the physician for ready reference.

**Combid.** Smith, Kline & French Laboratories, Philadelphia 1, Pennsylvania. Spansule capsules containing 10 mg. Compazine (prochlorperazine) and 5 mg. Darbid (isopropamide). Indicated for 24-hour control of both the physical and psychic components of ulcer and other gastrointestinal disorders. **Dose:** 1 capsule every twelve hours. **Sup:** Bottles of 30.

**Falvin.** Lederle Laboratories Division, American Cyanamid Co., Pearl River, New York. Capsules, each containing 1 USP Oral Unit Vitamin B<sub>12</sub> with Autrinic intrinsic factor concentrate, 300 mg. ferrous sulfate excised, 75 mg. ascorbic acid, and 1 mg. folic acid. Indicated for macrocytic and microcytic anemias as well as the treatment of marginal anemias and the B<sub>12</sub> deficiency states which may predispose a patient to anemia. **Dose:** 2 capsules daily, or as directed by physician. **Sup:** Bottles of 60 and 500.

**Migraine Rectal Suppositories.** Organon, Inc., Orange, New Jersey. Each suppository contains 1.0 mg. of ergotamine tartrate, 100 mg. caffeine, 0.1 mg. levorotatory belladonna alkaloids, and 130.0 mg. acetophenetidin in a specially blended base of hydrogenated vegetable oils. Indicated for prompt relief of the entire migraine-vascular headache syndrome, especially where there is

severe nausea and vomiting. **Dose:** 1 suppository at first indication of migraine attack, followed by 1 suppository every 20-30 minutes until the attack is fully controlled. **Sup:** Boxes of 12.

**Neo-Hydeltrasol Nasal Spray.** Merck Sharp & Dohme, Philadelphia 1, Pennsylvania. Each cubic centimeter contains 1.0 mg. prednisolone 21-phosphate, 2.5 mg. phenylephrine hydrochloride, 7.5 mg. propadrine hydrochloride phenylpropanolamine hydrochloride and 5.0 mg. neomycin sulfate. Indicated for use in the management of acute and chronic allergic disorders of the nose, including polypsis associated with such disorders, and vasomotor rhinitis. **Dose:** As directed by physician. **Sup:** Spray bottle of 15 cc.

**Novahistine Expectorant.** Pitman-Moore Company, Indianapolis, Indiana. Cough expectorant, each teaspoonful of which contains 10 mg. phenylephrine HCl, 12.5 mg. prophenpyridamine maleate, 135 mg. ammonium chloride, 84.5 mg. sodium citrate, 13.5 mg. chloroform, 1 mg. menthol, and 1.66 mg. dihydrocodeine one bitartrate. Indicated in the treatment of respiratory conditions complicated by congested mucosa, bronchospasm and non-essential harmful cough. **Dose:** 2 teaspoonsful three

—Concluded on page 90a

## **anginaphobia**

*when the temperature falls, fear needn't rise!*

*The agonizing dread of angina pectoris leads the patient to fear an attack whenever he must step out into bitter cold. Inevitably, anticipation rivals exposure as the precipitating factor.*

*Remove the fear factor:* Peritrate assures prolonged coronary vasodilatation, helps prevent attacks of angina, and automatically reduces the ever-present fear of attacks. Even though the patient cannot ignore previous restrictions,

*routine use of Peritrate helps to*

- *reduce the number and severity of attacks*
- *decrease nitroglycerin dependence*
- *increase exercise tolerance*
- *improve abnormal EKG patterns*

*Fear in the foreground? For the unduly fearful patient, Peritrate with Phenobarbital creates a more favorable clinical climate for long-range Peritrate prophylaxis.*

*Usual dosage: 20 mg. of Peritrate before meals and at bedtime*

# **Peritrate®**

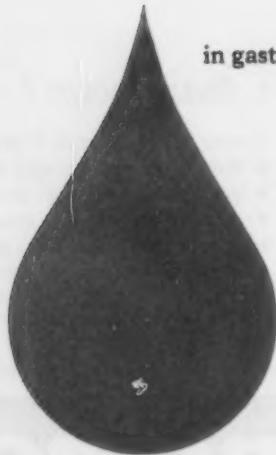
(BRAND OF PENTABERYTHRO-DEHYDRATE)

*and new Peritrate 20 mg. with Phenobarbital*

**WARNER-CHILCOTT**



in gastrointestinal hemorrhage



“bleeding...was immediately controlled”  
“has often proved...lifesaving when all  
other methods failed”\*  
\* Jackson, A. S.: Journal-Lancet 76:45 (Feb.) 1956.

## **KOAGAMIN®** parenteral hemostat

In his recent report of 40 cases of gastrointestinal bleeding, Jackson states that "...Koagamin produced dramatic results. The solution will not stop the hemorrhage of a large sclerotic vessel, but it has often proved effective and lifesaving when all other methods failed."\*

KOAGAMIN acts on the late phases of the clotting mechanism, rapidly checks venous and capillary bleeding regardless of cause. It has an outstanding record of safety during 19 years of use in general surgery, internal medicine, obstetrics and gynecology, urology, ophthalmology and otorhinolaryngology and dentistry.

KOAGAMIN, an aqueous solution of oxalic and malonic acids for parenteral use, is supplied in 10-cc. diaphragm-stoppered vials.

\* Jackson, A. S.: Journal-Lancet 76:45 (Feb.) 1956.

CHATHAM PHARMACEUTICALS, INC • NEWARK 2, NEW JERSEY

Distributed in Canada by Austin Laboratories, Limited, Guelph, Ontario

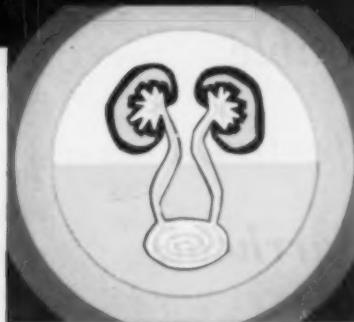
00250

**NOW**  
a bactericidal  
urinary  
antiseptic

NEW

# CATHOZOLE®

(Sodium Novobiocin with Sulfamethythiadiazole)



**Antibacterial spectrum:** 'CATHOZOLE' is bactericidal and has an exceptionally broad antibacterial spectrum. It is highly effective against the most frequent and even against some of the most stubborn urinary tract infections (*E. coli*, *P. vulgaris*, *pseudomonas* and *staphylococcus*).

**Speed of action:** Pain, frequency, burning and irritation usually subside within 24 hours.

**Urinary tract concentrations:** Achieves effective levels, higher than those attained with any other urinary tract antiseptic.

**Solubility:** Highest solubility and lowest acetylation of any available urinary tract antiseptic. Less hazard of crystalluria.

**Tolerance:** Oral dosage forms well tolerated. Relatively rare side effects.

**Indications:** Acute and chronic, uncomplicated and resistant urinary tract infection in young and old. No cross resistance with other urinary tract antiseptics.

**Supplied:** Tablets 'CATHOZOLE'—In bottles of 24 and 100 tablets, each containing 125 mg. 'Cathomycin' Novobiocin (as sodium novobiocin) and 375 mg. sulfamethythiadiazole.

CATHOZOLE is a trademark  
of Merck & Co., Inc.



**MERCK SHARP & DOHME**  
DIVISION OF MERCK & CO., INC., PHILADELPHIA 1, PA.

*now 2  
palatable  
and effective  
antidiarrheals  
containing*

Carob powder buffers intestinal contents and adsorbs irritant secretions, bacteria, and toxins. Its marked demulcent properties check hyperperistalsis, permitting fluid absorption and rapidly producing formed stools. Carob powder tends to prevent dehydration and loss of electrolytes and the patient can usually be maintained on adequate nutritious diets during treatment.

The high soluble carbohydrate content (mainly fructose) of carob powder provides valuable nutritional support and tends to counteract *diarrhea-induced acidosis*.

## **CAROB POWDER**

*for  
prompt  
symptomatic  
control*



**PITMAN-  
MOORE  
COMPANY**

DIVISION OF  
ALLIED LABORATORIES, INC.  
INDIANAPOLIS 6, INDIANA

# *Carob powder with streptomycin/neomycin*

## **INTROMYCIN<sup>TM</sup>**

*Carob Powder . . .* for prompt relief of diarrhea symptoms

*Neomycin/Streptomycin . . .* for the prevention and treatment of bacterial infections

*your patients recover more rapidly with INTROMYCIN*

*because*

- formed stools are produced 5 times faster<sup>1</sup>
- water loss is better controlled
- electrolytes are replenished
- bacterial pathogens are inhibited

1. Abella, P.U.: J. Pediat. 41:82, 1952.

Available in 75 Gram (2½ oz.) bottles.

*Have  
you  
taken  
the  
INTROMYCIN  
taste  
test?*



# *Carob powder without antibiotics*

## **AROBON<sup>®</sup>**

Arobon alone controls most non-specific, uncomplicated diarrheas by physiologic means—without the use of sedatives or narcotics. In infectious diarrheas, it controls the distressing symptoms when used in conjunction with appropriate antibiotic or chemotherapeutic treatment.

Originally introduced as an outstanding antidiarrheal for infants and children, Arobon has proved remarkably efficacious in the treatment of diarrheas of all age groups.

Distributed by Pitman-Moore Company under the trade name AROBON through rights acquired from the trademark owner, the Nestlé Company, Inc.

Available in 5 oz. bottles.

times a day as directed by physician. **Sup:** Bottles of 16 oz.

**Premarin H-C Vaginal Cream,** Ayerst Laboratories, New York, New York. Each gram provides 0.625 mg. conjugated estrogens equine and 1 mg. hydrocortisone in a non-liquefying base. Indicated in the treatment of a number of vaginal conditions which occur in the prepubescent and postmenopausal patient. **Use:** As directed by physician. **Sup:** 1 oz. tube with calibrated applicator.

**Romilar CF Capsules,** Roche Laboratories, Div. of Hoffman-La Roche Inc., Nutley, New Jersey. Each capsule contains 15 mg. of Romilar hydrobromide, 1.25 mg. of chlorphenamine maleate, 5 mg. of phenylephrine hydrochloride, and 120 mg. of N-acetyl-p-aminophenol. Indicated for relief of the most commonly encountered symptoms of colds, flu and other acute upper respiratory disorders. **Dose:** As directed by physician. **Sup:** Bottles of 100.

**Tetrex Intramuscular,** Bristol Laboratories, New York, New York. New injectable Tetrex. Indicated for treating various types of infection where broad spectrum antibiotic therapy is found to be effective. **Dose:** 250 mg. to 500 mg. intramuscularly daily, as directed by physician. **Sup:** 1 dose vial of 250 mg.

**Tricofuron Improved,** Eaton Laboratories, Norwich, New York. Vaginal suppositories and powder contain Furoxone (brand of furazolidone) and Micofur (brand of nifuroxime). Indicated for treatment of trichomoniasis and vaginal moniliasis. **Use:** As directed by physician. **Sup:** Suppositories of 2 Gm. in boxes of 12. Powder in plastic insufflator of 15 Gm. and glass bottle of 30 Gm.

**Urologic Solution G,** Abbott Laboratories, North Chicago, Illinois. Solution has a pH of 4.0 and contains citric acid, U.S.P. monohydrate; magnesium oxide (anhydrous), and sodium carbonate (anhydrous). Indicated to dissolve calcified calculi within the urinary tract. Intended for irrigation only, not for parenteral use, as directed by physician. **Sup:** Container of 1000-cc.

**Vesprin,** E. R. Squibb & Sons, New York, New York. Tablets, each containing 10, 25, or 50 mg. trifluoperazine (Squibb). Indicated for schizophrenia, manic states and psychoses associated with organic brain disease. **Dose:** 1 tablet three times a day. **Sup:** Each strength in bottles of 50.

**Vifort Nectar,** Endo Laboratories, Richmond Hill, New York. Each 5 cc teaspoonful contains 5000 units Vitamin A, 1000 units Vitamin D, 50 mg. Vitamin C, 3 mg. thiamine HCl, 3 mg. riboflavin phosphate, 10 mg. niacinamide, 1 mg. pyridoxine HCl, 10 mg. panthenol, and 5 mcg. B<sub>12</sub>. Indicated for use as a flavored nutritional supplement. **Dose:** As directed by physician. **Sup:** Bottles of 4 and 16 oz.

**Zactirin,** Wyeth Laboratories, Philadelphia 3, Pennsylvania. Non-narcotic analgesic. Effective for relief of low back pain and pain of minor traumatic injuries, joint pains and related disorders, abdominal, perineal, and menstrual pains, and post-operative and dental pains. Yellow and green tablets, each containing 75 mg. ethoheptazine citrate and 5 gr. acetylsalicylic acid. **Dose:** For moderate to moderately severe pain, 2 tablets 3 or 4 times daily. For mild pain, 1 tablet 3 or 4 times daily. Total daily dosage should not exceed 8 tablets. **Sup:** Bottles of 48.

*for the depressed and regressed*

selective increase in psychic energy

# MARSILID

(iproniazid)

Roche

In both mild and severe depression, Marsilid can restore a sense of healthy well-being, with renewed vigor, activity and interests. Patients with acute depression refractory to shock treatment have shown a heartening response to Marsilid. Even "burned out" psychotics, untouched by any other therapy, have become more alert, responsive and sociable.

As a psychic energizer, Marsilid is truly unique. It provides continuous mood improvement with gradually reduced dosage. Patients do not develop resistance to its normalizing effect; there is no tachyphylaxis. Marsilid does not elevate blood pressure . . . does not decrease but usually stimulates appetite.

In mild depression, improvement with Marsilid is usually evident within a week or two. In severe depressive states of hospitalized psychotics, a month or more may be required for apparent response . . . but Marsilid often leads to complete remission, obviating the need for shock therapy.

**Note:** Marsilid is contraindicated in patients who are agitated, overactive or overstimulated, or in those with a history of renal or hepatic disease.

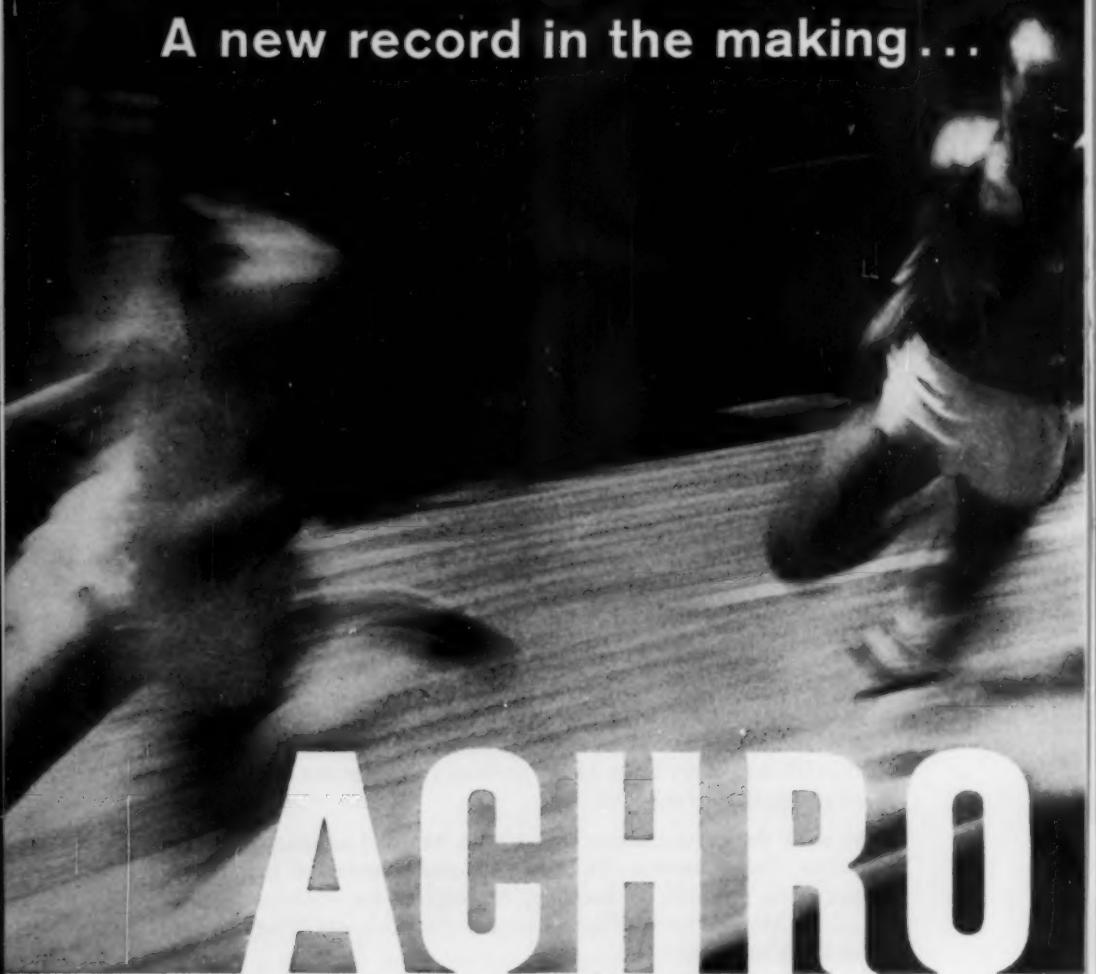
*For complete references and information concerning dosage, indications and contraindications, write V. D. Mattia, Jr., M. D., Director of Medical Information, Roche Laboratories, Division of Hoffmann-La Roche Inc., Nutley 10, N. J.*

**MARSILID® PHOSPHATE** — brand of iproniazid phosphate

Supplied in scored tablets of 50 mg (yellow), 25 mg (orange), and 10 mg (pink)



*Original Research in Medicine and Chemistry*



A new record in the making...

# ACHROMYCIN

Outstanding benefits in therapy established ACHROMYCIN Tetracycline in the treatment of more than 50 different infections.

Now, new, rapid-acting ACHROMYCIN V Capsules offer more patients consistently high blood levels with the same broad anti-infective spectrum of the pure unaltered crystalline tetracycline HCl molecule of ACHROMYCIN, same low incidence of side



# MYCIN V



Tetracycline HCl Buffered with Citric Acid

effects, same dosage and indications. New **ACHROMYCIN V**  
Capsules do not contain sodium.

• **REMEMBER THE V WHEN SPECIFYING ACHROMYCIN V**

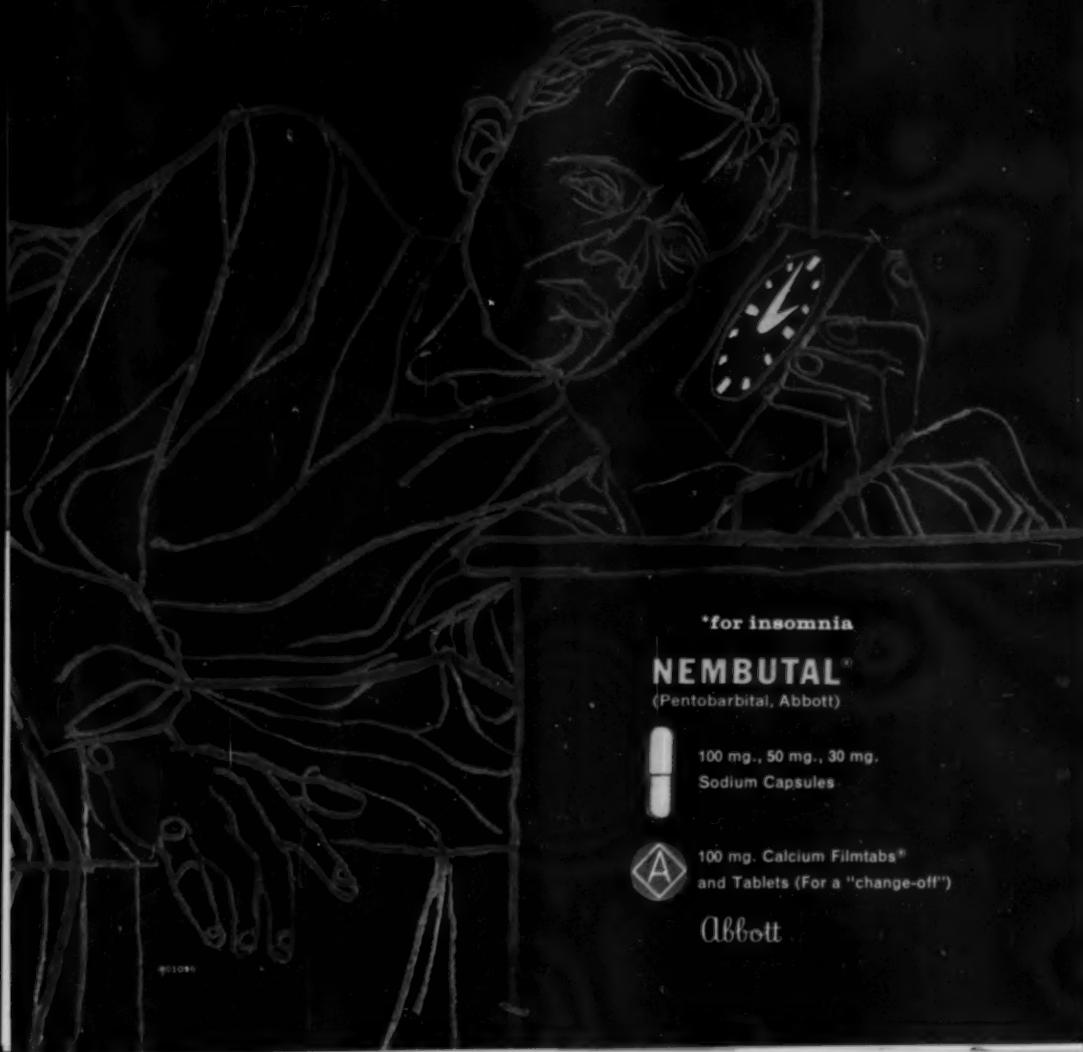
**CAPSULES:** (blue-yellow) 250 mg. tetracycline HCl (buffered with citric acid, 250 mg.); 100 mg. tetracycline HCl (buffered with citric acid, 100 mg.). **ACHROMYCIN V DOSAGE.** Recommended basic oral dosage is 6-7 mg. per lb. body weight per day. In acute, severe infections often encountered in infants and children, the dose should be 12 mg. per lb. body weight per day. Dosage in the average adult should be 1 Gm. divided into four 250 mg. doses.

LEDERLE LABORATORIES DIVISION, AMERICAN CYANAMID COMPANY, PEARL RIVER, NEW YORK

\*Reg. U. S. Pat. Off.



There is a form  
of short-acting  
**NEMBUTAL** to serve  
every need\* in  
barbiturate  
therapy



\*for insomnia

**NEMBUTAL®**

(Pentobarbital, Abbott)



100 mg., 50 mg., 30 mg.  
Sodium Capsules



100 mg. Calcium Filmtabs®  
and Tablets (For a "change-off")

Abbott

# Management of Alcoholism in General Practice

EBBE CURTIS HOFF, PH.D., M.D. and CHARLES E. McKEOWN, M.D.

Division of Alcohol Studies and Rehabilitation, State  
Health Department, Commonwealth of Virginia.

**A**lcoholism is distributed diffusely in the general population, attacking young and old, educated and uneducated, rich and poor, people in every walk of life. This diffuse distribution appears to be a feature of alcoholism in our times and has increasingly drawn the attention of the general practitioner to the problem since he is more likely than ever before to encounter alcoholics in his practice. Often, he is the first professional person to uncover the condition. This presents a dilemma to the doctor since he sometimes finds himself at a loss to know what to do for such patients. Yet modern experience has shown that many alcoholics can be helped and that the general practitioner has a useful part to play. Correct handling of the patient by the general practitioner can materially contribute to a favorable outcome.

**Definition** There is no generally accepted definition of alcoholism. Alcoholics form a large, mixed group of sick people suffering from a variety of conditions and having in common the symptom of uncontrolled, harmful use of alcoholic beverages or other products containing alcohol. This symptom—whatever its causes—is so destructive and so damaging that unless the alcoholic arrests his drinking permanently, his life becomes more and more deteriorated and disorganized with an inevitable downhill course.

Alcoholics are sick people and yet there is no single disease pattern. Some alcoholics reveal specifically diagnosable psychiatric disorders and in some the condition is complicated by metabolic dysfunctions affecting liver, nervous system, and the other organs. In a proportion of alcoholics one discerns a pic-

ture of loss of drinking control with progressive, physiological, psychological, and social deterioration but without specific, well-defined psychiatric or medical disease.

Alcoholism has been defined as a progressive disorder of behavior characterized by (1) forms of drinking which deviate from traditional and customary use of alcoholic beverages in the community (2) loss of control over the use of alcoholic beverages and (3) interference with bodily and mental health, interpersonal relations, and social and economic functioning. Such a definition is independent of the etiological factors which may lead to alcoholism and also of the extent to which these factors may be related to heredity or to physiological, metabolic, or psychological determinants.

In attempting a working definition, one cannot avoid the observation that for the alcoholic the drinking seems to hold a meaning for him that is different from or in excess of the meaning of drinking for the so-called "social drinker." For the alcoholic, alcohol comes more and more to occupy a central place in his life. It pulls him together in the morning; it calms him at night; it gives him courage; provides escape, and he uses it to assuage the ravages of withdrawal. For the social drinker, on the other hand, the use of alcoholic beverages is part of the esthetics of a good life, adherence to social and cultural customs, an expression of festive gaiety on important occasions, a concession to demands of the social group, an occasional letting down of social and other barriers, a mild tranquilizer or an escape from boredom. For the alcoholic, there is a pervasive need which is deep-seated and insatiable.

**Etiology** It is not known why one person continues all his life to drink with control and little or no apparent harm while another, sooner or later, or even from the start, is unable to regulate his drinking and becomes ill. No single etiological factor has been verified. Alcoholics do not belong to any one psychological type nor can their disorder be confidently traced to any one psychiatric disturbance, endocrine or metabolic dysfunction, or sociological abnormality. Studies of the psychological, social, and metabolic characteristics of different groups of alcoholics are underway and further well-designed research of this kind is needed. It seems likely that the underlying causes of alcoholism are multiple. Pathological, psychological, social, and metabolic processes may combine to produce the pattern of uncontrollable dependence on alcohol. How these pathological processes combine can only be speculated upon. Is there some genetically transmitted nutritional deficiency which, in a person subjected to early emotional trauma, results in an intolerable craving for alcohol? Attractive as such speculations are, we do not really know the answer. In the absence of a satisfactory general theory of alcoholism, treatment efforts are handicapped. The need for research is urgent.

**Occurrence, Types, and Clinical Course** One of the handicaps in studying the epidemiology of alcoholism is that we do not now possess accurate direct information on the numbers of alcoholics in a given population. Alcoholism is not a reportable condition and in hospitals and health department statistical records, other diagnostic terms are usually entered as causes of morbidity or death. Recent suggestions have been made as to tech-

niques of obtaining data directly but at present our figures on the numbers of alcoholics are based principally upon the Jellinek formula which utilizes the mortality figures for hepatic cirrhosis. Other methods of estimation utilize (1) reported deaths from acute and chronic alcoholism, (2) admissions to mental hospitals for alcoholic psychosis, (3) arrests for drunkenness, and (4) admissions to general hospitals for concurrent diseases of chronic alcoholism. All of these methods have particular limitations.

In alcoholism clinics throughout the world, figures show that more men than women present themselves for treatment. For example, of 3113 patients accepted in the facilities of the Division of Alcohol Studies and Rehabilitation, Commonwealth of Virginia, from November, 1948, to July, 1957, 88.3% were men and 11.7% were women. It seems likely, however, that the proportion of men alcoholics to women alcoholics in the Commonwealth of Virginia (and also in other parts of the world) is smaller than these figures would indicate, and that a relatively smaller proportion of women seek treatment and probably delay treatment longer than do men.

In the clinics of the Division of Alcohol Studies and Rehabilitation, the majority of the patients accepted for treatment are between the ages of 35 to 55 on admission. This is not to say, however, that alcoholism is a condition limited to middle age. Actually, early manifestations of the condition often appear in the twenties and even in the second decade of life and by the time the patient applies for treatment there is frequently a history of ten or fifteen years of increasingly pathological use of alcohol.

It is not easy to determine exactly, in reviewing the course of the illness in a given patient, just when he may be said to become an "alcoholic." Charts of the course of alcoholism have been constructed and these are quite useful. Often one finds that among those who subsequently become alcoholics, the first drink is more clearly remembered than by subjects who did not become alcoholics and further, that the first drink of the alcoholic was more likely to have been associated with drunkenness, sickness, or punishment. Often, it meant more to the patient in terms of satisfaction of emotional needs than for non-alcoholics. Also, alcoholics sometimes report that from the start they appeared to have a greater tolerance for alcohol than others in that they could quite easily drink their companions "under the table" in their early days. Moreover, their early drinking seems in retrospect to have been associated with some personality inadequacy in many cases. However, a candid examination of the life histories of hundreds of other alcoholics reveals no evidence, in retrospect, of any differences in the early drinking pattern, apparent tolerance, meaning of drinking to the patient, or personality adequacy in the prealcoholic phase, as compared with drinking subjects who never became alcoholics. The limited usefulness of histories taken after alcoholism has become established is obvious. For a more meaningful appraisal of the significance of prealcoholic factors in the development of alcoholism, it is necessary to carry out continuing longitudinal studies of subjects over many years beginning at early ages.

Some alcoholic patients give a history of having used alcoholic beverages with relatively good control for several years,

finally getting into difficulty in the late thirties or in the forties. Others feel that they were "alcoholics from the first drink" and were never able to handle alcohol safely or adequately. The drinking pattern of the alcoholic is not uniform. Some drink daily and may keep themselves in an almost continuously alcoholized state. Such patients frequently contend that they have "never been drunk"—meaning that they never go on sprees or benders or become "dead drunk." Actually, they may never be entirely sober. Sometimes these patients have difficulty in admitting to themselves that they have a drinking problem. Other alcoholics characteristically drink excessively on week ends or at regularly or irregularly timed sprees or benders.

The course of alcohol addiction has been well described by Jellinek who differentiates a *prodromal phase* ushered in by an increase of tolerance to alcohol and by memory blackouts. At this phase, drinking may not be conspicuous but from time to time the subject finds himself unable to remember what happened beyond a certain point in a drinking session. For instance, he may even drive home in his car and have no recollection the next morning of having done so. The memory blackout is clearly different from the experience of "passing out" since the amnesic patient walks about, talks, drives, and performs other functions and may not appear to those around him to have drunk excessively. During the *prodromal phase*, the subject becomes more and more preoccupied with drinking and is often sensitive to reference to his use of alcohol. He begins to find that he needs more alcohol than may be provided, for example, at a party, and may gulp a few

quick ones before attending or may sneak extra ones in the kitchen or the bathroom. During the latter part of the *prodromal phase* memory blackouts become more frequent. These memory blackouts are significant in foreshadowing alcohol addiction and indicate that the nervous system is becoming pathologically sensitized to alcohol.

Jellinek next distinguishes a *crucial or basic phase* beginning with loss of control of the use of alcohol. This is the beginning of alcohol addiction. It means that after the use of a small quantity of alcohol, a demand is created which continues until advanced intoxication makes further intake impossible. From this time on, the victim never really knows when he will be drunk or sober. He will go to a party planning to have only one or two drinks and will be brought home drunk. The patient becomes more and more isolated from effective participation in family and community life. There may be loss of jobs, hospitalization, disruption of marriage, and other evidences of deterioration. The alcoholic sets up a system of rationalization and alibis; he may be resentful, aggressive, extravagant, remorseful, and shows poor judgment. Signs of organic disorder of the liver, brain, or other organs may appear.

Jellinek distinguishes next a *chronic phase* which may be ushered in by morning drinking and extended benders during which the alcoholic may remain intoxicated for many days in succession. The patient uses alcohol to overcome his tremors, fears, and other symptoms of the previous night's drinking. Patients in this phase often find that they are unable to tolerate as much alcohol as they used to. The pleasurable effects last for a shorter time and the disagree-

able symptoms come on earlier and persists longer. Eventually, the patient finds himself drinking to protect himself from the horrors of withdrawal, delirium tremens, hallucinosis, and tremors.

Death may supervene at various stages and from several causes in the course of alcoholism. Generally, it may be stated that unless the alcoholic arrests his drinking, he will follow a downhill course terminating in death. The patient may, however, become accessible to therapy at any phase of his illness. The most powerful motivating factor leading to effective treatment is a clear recognition by the patient himself, that he is unable to handle alcohol and that his life has become unmanageable. This has been described by Alcoholics Anonymous as "hitting bottom." In the early experiences of Alcoholics Anonymous, many alcoholics who subsequently recovered "hit bottom" after having reached serious depths of physical, mental, social, moral, and spiritual disorganization. In recent years it has been shown, however, that many alcoholics can be helped to recognize their condition at earlier stages and thereby take effective steps toward recovery.

**Therapy** Treatment resolves itself into several phases depending upon the condition of the patient, degree of motivation, and environmental features including family, job, religion, and financial resources. A knowledge of these factors is essential to proper and complete therapy. Special sociological studies and psychological evaluation are necessary in certain instances.

The unconscious patient with an alcoholic breath should be examined closely for trauma and other physical diseases. If respiration is impaired, he should receive coramine (5 cc intravenously)

and/or caffeine sodium benzoate (0.5 gm subcutaneously). Parenteral fluids with the addition of nor-epinephrine may be necessary if shock is present. Chlorpromazine (50 mgm every 4 to 6 hours, as necessary) or promazine may be used for sedation after the individual is no longer stuporous.

The acutely intoxicated, conscious individual should be suitably restrained when necessary, and given *sedative therapy* in place of alcoholic beverages. It is best to stop the alcohol immediately, and use mephenesin (2 to 3 gm every 4 hours) or elixir chloral hydrate (2 gm every 3 hours) as substitution therapy. Violent or hallucinating patients should be given promazine parenterally (50 mgm every 4 hours, prn) provided the blood pressure is well sustained within normal limits. It is sometimes necessary to continue the sedation for 4 or 5 days with a gradual reduction when indicated by clinical response. *Rehydration* is important in these patients. If they are unable to retain water and liquid nutrients, they should receive fluids parenterally. 1000 cc of 10 per cent dextrose in saline twice daily may be necessary for two or three days. The addition of 25 units of crystalline insulin in each parenteral feeding is believed by some to facilitate the metabolism of alcohol. A parenteral multivitamin supplement in dosages of one or two cc may also be added. Intravenous mephenesin (1 gm) or promazine (50 mgm) may also be added to the fluids when indicated by the clinical course. The *diet* should begin as soon as the patient can retain liquids and then be gradually supplemented until he is able to retain solid food. A high carbohydrate (250 grams), moderate protein (75 grams), and low fat (60 grams)

type diet is retained best.

Supplemental *vitamin therapy* by intramuscular or oral route is usually necessary for several days.

The withdrawal phase is exemplified by psychomotor agitation, and upper gastrointestinal symptoms. The tremor and "inward shakes" are benefited greatly by meprobamate (400 mgm every 4 hours prn) or the continued use of chloral hydrate. These drugs are also effective in controlling the restless, ambulating, convalescent patient. The frequent insomnia may be controlled by doubling the dosage of these drugs at bedtime. Dysphagia, heartburn, and the midepigastric pain secondary to alcoholic gastritis may be soothed by cream of aluminum hydroxide, and/or, antispasmodic mixture containing belladonna and barbiturate. If the digestive symptoms persist, an upper G.I. X-ray should be done to rule out peptic ulcer.

If delirium continues, larger doses of promazine (100 mgm I.M. every 4 hours prn) should be given, provided the blood pressure is normal. Narcotics and barbituates should not be used because of their synergistic action with alcohol. If the individual cannot be controlled by this means, he should be referred to a neuropsychiatrist for more specific care. Alcoholic psychotics should also be referred for specific mental care.

Every attempt at complete *rehabilitation* should be instituted. This is done best in a special hospital unit such as those available in many states. The chronicity and seriousness of his problem should be stressed to the patient and his family so that he will be best motivated towards prolonged care. Therapy is directed towards helping the patient become the kind of person who can handle his problems without the use of

alcohol. Substitution tranquilizers are sometimes necessary during this rehabilitation period. It is standard practice to help the individual realize that he can never safely drink alcoholic beverages again. Intensive re-education by films, lectures and psychotherapeutic discussion groups is available in some clinics. Occupational therapy, recreation, and the development of new hobbies are valuable. Prolonged outpatient psychotherapy should be continued after discharge. The individual should be referred to Alcoholics Anonymous when feasible. Physicians will be given the addresses of local Alcoholics Anonymous groups if they write to The General Service Board of Alcoholics Anonymous, Inc., Post Office Box 459, Grand Central Annex, New York 17, N. Y. Literature on alcoholism as well as information on treatment resources are available from The National Council on Alcoholism, 2 East 103rd Street, New York 29, N. Y. Information on state-operated alcoholism treatment programs may be obtained from Mr. Harold Demone, Secretary, North American Association of Alcoholism Programs, Box 210, 739 Boylston Street, Boston 16, Massachusetts.

#### **Early Diagnosis and Prevention**

In the Division of Alcohol Studies and Rehabilitation of the Commonwealth of Virginia, it has been found that patients in the age group of forty to forty-four show the most favorable response to treatment of all the five-year age categories in which significant percentages could be derived. Patients older than these tend to do less well and our studies indicate also that patients under thirty have not quite as good a record as those above that age. It appears that patients in the forties have experienced sufficiently the ravages of alcoholism to be ready to

recognize it as a problem but are still sufficiently sound physically, mentally, and otherwise to be able to benefit from therapy. The somewhat lower success rate in patients under thirty may be ascribed to inadequate motivation toward treatment, and a larger number of patients with deep-seated psychiatric disorders in this age group. There is a gradual trend towards earlier presentation for treatment which should be encouraged. This may be accomplished by education as to the nature and course of alcoholism and the serious significance of symptoms such as repeated memory blackouts. The general practitioner can be helpful in fostering this trend towards earlier diagnosis and treatment. A patient mentioning memory blackouts to his physician should be taken seriously and given the benefit of a careful evaluation of his whole health status. It is not sufficient to laugh off such symptoms by a pat on the back and an admonition to "cut down a bit on drinking". In fact, the sooner the subject of alcoholism is removed from the area of joking and humor altogether, the sooner there will be created the climate of enlightened public opinion necessary for facing this serious biosocial problem intelligently.

Since the etiology of alcoholism is not well understood scientifically, reliable approaches to prevention are not yet available. Research is vitally needed. Much may be accomplished in the present state of our knowledge, however, by education about the acute and chronic effects of alcohol and the nature and course of alcoholism. Danger signals such as memory blackouts and dependency upon alcohol in facing life's problem should be understood. Much can be accomplished in guiding young

people in the process of growing up and maturing. Too often the use of alcohol by teen-agers is motivated by an acceptance of drinking as a sign of adulthood. Prevention of alcoholism may, in part, be fostered by a specific education concerning alcohol and, in part, by various means for improving mental health generally. In all these efforts, the general practitioner is in a key position to be of help.

**Research** It is obvious that well-designed basic and applied research in the field of alcoholism is necessary. Fortunately, increasing numbers of sound research projects in this field are being undertaken but support for research investigation and numbers of competent investigators turning to this area are still insufficient. It is becoming apparent to many outstanding investigators that research in problems of alcohol and alcoholism is highly rewarding and worthy of their best efforts.

In the most basic areas of research, further studies are needed of the metabolism of alcohol and the effects of alcohol on metabolism at the intimate levels of cellular function. These need particularly to be correlated with modern advances in the biochemistry of enzymes. Our knowledge of what happens to alcohol in the course of its breakdown in the body is still defective and some previous guesses have been shown to be incorrect. Further, we do not yet know what effects of alcohol can be attributed to particular metabolic products. It is essential in the field of alcohol inquiry to learn more about the precise role alcohol plays in the normal metabolism of the cells. How far does it directly substitute for other food-stuffs and to what extent and in what way does it interfere with metabolic activities of the

central nervous system, liver and other organs?

Further studies should be pursued upon the nature of the narcotic action of alcohol and problems related to the addictive process. It is important in all alcohol research that investigation should not be confined solely to the effects of ethyl alcohol but, also, that studies should include investigations of the higher alcohols present as congeners in alcohol beverages. Research on the effects of alcohol should include *in vivo* studies of associated or correlated physical effects of alcohol examined at the molecular level. More information is desired as to the effects of alcohol and its metabolites on excitatory and conductive processes at nerve cell membranes and on synaptic transmission. Anatomical, biochemical, and other bases for regional differences in the effects of alcohol on the nervous system should be examined.

There is a growing recognition of the value of studies of animal and human

behavior as affected by alcohol. Such studies require a high degree of scientific competence and carefully control studies. We need to know a great deal more about the phenomenon of tolerance to alcohol and how tolerance may be increased or decreased. There is need for more accurate tests of higher psychoneurological functions with which to measure the effects of alcohol on human behavior. These basic studies need to be correlated with efforts to understand more fully the causes and nature of alcoholism in terms of psychological and psychiatric insight and to evaluate newer pharmacological, nutritional, and psychiatric approaches to treatment.

General practitioners may be helpful by making themselves aware of the general lines of research in the field of alcohol and alcoholism and by encouraging when possible the appropriate competence and carefully control studies.

Medical College of Virginia Hospitals,  
Box 174, Richmond, Va.

**STOP!**

at "Coroner's Corner"  
Page 41a

Read the stories Doctors write of their  
unusual experience as coroners and medi-  
cal examiners.

—in every month's issue of  
**MEDICAL TIMES**

# Lupus Erythematosus

EDMUND L. DUBOIS, M.D.  
Los Angeles, California

From the Department of Internal Medicine, University of Southern California Medical School and The Los Angeles County General Hospital, Los Angeles, California.

Lupus erythematosus is a common disease of unknown etiology whose varied clinical manifestations run the entire gamut of dermatology and internal medicine. It is the purpose of this discussion to review briefly the significant advances which have been in the study and treatment of this illness in the past nine years. The concept of a broad clinical spectrum for this ailment has led to its being diagnosed with increasing frequency.<sup>1</sup> At the Los Angeles County General Hospital over 250 cases of the systemic form of the disease have been recognized and treated during the past seven years. At this institution the systemic form is as common as acute rheu-



Figure 1. Discoid lupus erythematosus. Note the typical distribution of the lesions. There are erythematous papules present with scaling. Depigmentation and central atrophy are evident in the large lesion.

matic fever, and more common than the acute forms of leukemia, pernicious anemia, multiple sclerosis and muscular dystrophy.

**Historical** Biett in 1828 first adequately described the lesions of discoid lupus erythematosus.<sup>2</sup> These consist of plaques or papules of varying sizes with scaling and follicular plugging, followed in the healing stages by atrophy and

This study was supported by the National Lupus Erythematosus Foundation, Inc.



Pretreatment



After 1 1/2 months therapy

**Figure 2. Systemic lupus erythematosus.** Note the distribution of the erythematous scaly papules in the "butterfly area". This patient was treated with steroids alone. The skin lesions of both systemic and discoid lupus may at times resemble each other.

either depigmentation or hyperpigmentation. (See Figure 1.) O'Leary has divided them into two groups, the localized or chronic discoid form, where the lesions are confined to the face, ears, scalp and lower lip; and the generalized discoid form which is also referred to as the chronic disseminated form, in which the lesions, in addition to the above site may be present elsewhere on the body.<sup>3</sup> The importance of this classification will be discussed later. Skin biopsy is a very helpful aid in confirming the diag-

nosis in equivocal cases of this disease.

Kaposi in 1872 noted the fact that certain cases of lupus erythematosus were accompanied by severe constitutional symptoms which might end in death, the so-called disseminated or systemic form. (S.L.E.)<sup>4</sup> He also recognized that lupus was more common in women than in men.

Osler in 1895 first emphasized the fundamental concept that the alterations occurring in the skin of these patients had their counterpart in the internal organs and indeed he described the occurrence of visceral lesions without skin changes, a concept only recently accepted.<sup>5</sup>

Libman and Sacks in 1924 described



After 5 months therapy



After 9 months therapy

the typical verrucous endocarditis occurring in cases of lupus erythematosus.<sup>6</sup>

In 1935 Baehr, Klemperer and Schifrin advanced the pathologic study by their description of certain well defined alterations in the blood vessels, especially in the kidney—the so-called "wire-loop" lesions of the glomerular capillaries.<sup>7, 8</sup> Jarncho in 1936, demonstrated the peculiar splenic vascular alteration, the "onion-skin" change of the collagen about the arterioles.<sup>9</sup> Although the fundamental lesion may be a connective tissue alteration, clinically it is important to emphasize the vascular change, which is predominant in the causation of central nervous system changes, intestinal and renal damage. In 1940 Ginz-

ler and Fox pointed out the "hematoxylin-eosin" bodies in the heart valves, lymph nodes and kidneys.<sup>10</sup> These bodies have subsequently been shown to be the same material as the inclusions in the L. E. cells.<sup>11</sup>

The last great advance in the descriptive phase of the disease came in 1949 when Malcolm Hargraves noted peculiar inclusion bodies in the polymorphonuclear leukocytes which have been shown to be pathognomonic.<sup>12</sup> This test has greatly expanded the breadth of our concept of lupus by enabling us to diagnose equivocal cases. It has also spurred the biochemical studies which are the key to the etiology of the illness.

**Biochemical** Haserick increased our

knowledge of the L. E. test by demonstrating the fact that the substance in the serum which produced the L. E. cells was a gamma globulin which caused similar reactions in both human and animal peripheral blood and bone marrow leukocytes.<sup>13, 14</sup> He immunized rabbits with L. E. gamma globulin and produced antibodies against it. These antibodies could quantitatively precipitate out the L. E. globulins which has been named the L. E. factor.

Klemperer studied the hematoxylin bodies found in the heart, kidneys and lymph nodes which resemble the L. E. inclusions. He feels that they are de-polymerized desoxyribonucleic acid.<sup>11</sup> These L. E. bodies are often found free in the positive blood L. E. preparations and are almost as specific as the typical L. E. cell.<sup>15</sup>

Rohn and Bond studied the *in vitro* formation of L. E. cells with supravital stains and they observed that the homogeneous bluish material is derived from autolysis of the nucleus of a segmented polymorphonuclear leukocyte which is phagocytized by other polymorphonuclear leukocytes.<sup>16</sup>

Hench and his co-workers in 1949 first pointed out the profound effect of cortisone and ACTH on the course of lupus erythematosus.<sup>17</sup> Their observations have been confirmed by numerous workers.

#### **Discoid Lupus Erythematosus**

Chronic discoid lupus erythematosus has been regarded as primarily a skin disease with rare systemic manifestations. The author and Dr. Stuart Martel were impressed by the large number of "discoid" lupus patients who had numerous systemic complaints.<sup>18</sup> We performed a complete history, physical examination and routine laboratory

work on a series of 41 patients with this disease. An attempt was made to obtain all cases attending the dermatology clinic with this diagnosis. The patients were divided into two groups: the localized discoid form with skin lesions above the chin, and the generalized discoid form with cutaneous involvement on the face and elsewhere. Sixteen of the twenty-six patients (62%) of the localized discoid group had evidence at some time in the course of their illness of arthritis, fever, Raynaud's phenomenon, pleurisy, or other systemic changes by history and physical examination alone. Fourteen of the fifteen patients (93%) of generalized discoid disease had such changes. If, in addition, laboratory abnormalities such as leukopenia, elevated sedimentation rate, hyperglobulinemia or abnormal cephalin flocculation or thymol turbidity tests were considered, then 24 of the 26 with localized discoid disease and all fifteen of the generalized group showed such changes. Therefore, there was evidence of systemic involvement in 96% of these patients with the chronic discoid lupus.

Three different modes of onset of discoid lupus were found. Thirty-three patients (72%) had cutaneous changes initially, followed in 45% of this group by rheumatoid-like arthritis. Seven patients had rheumatoid arthritis prior to the appearance of discoid lesions. One patient had a biologic false positive serologic test prior to her skin lesions.

There are other laboratory evidences of the fact that so-called discoid lupus is not primarily a cutaneous disease. The alpha one, alpha two and gamma globulins rise serially and the albumins fall in the transition between discoid and acute systemic lupus.<sup>19</sup> There is also a rising percentage of false-positive sero-

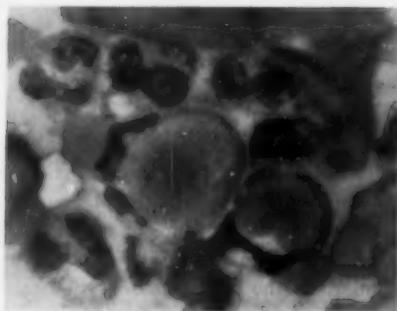


Figure 3. Two typical L.E. cells

logic tests for syphilis as one goes from one form to another.<sup>20</sup> One of the best studies of the degree of systemic change in discoid lupus is that by Huff, Taylor and Keys, who demonstrated plethysmographical changes in the fingers of patients with chronic discoid lupus, offering clear evidence that in this disease there is a circulatory dysfunction in areas remote from the site of visible lesions.<sup>21</sup>

The classification of lupus erythematosus is an arbitrary one. There are many transitions between the types. Discoid lupus from its inception is a systemic disorder which is a variant of the more malignant acute disseminated form. The benign-appearing cutaneous lesions may be a herald of advanced systemic manifestations which can be present at the same time or at a later date, when the skin changes have healed. Therefore all these patients should have a thorough general medical survey. The form of therapy instituted depends entirely upon the extent of the disease.

**Systemic Lupus Erythematosus**  
Eight-eight percent of the patients with this form of the illness are women, the majority between ages ten and thirty at the onset of their symptoms. There is

no classic clinical pattern. As our knowledge of its varied manifestations is expanded, so the number of correctly diagnosed cases is increased. The disease, which is subject to many remissions and exacerbations, may affect one system as the skin, heal and concurrently or years later affect another region such as the kidney. Below it given an outline of the systems which may be involved either singly or in any combination.

- Signs of catabolism—fever, weight loss, emaciation
- Connective tissue lesions—polyserositis, pleurisy, pericarditis, rheumatoid arthritis
- Vascular lesions — skin, ocular fundi, kidney, central nervous system, gastrointestinal tract, adenopathy, splenomegaly, Raynaud's phenomenon
- Hematologic changes—normocytic anemia (usually hemolytic), leukopenia, thrombocytopenia, circulating anticoagulants and hypoprothrombinemia.

The fever curve may be of any type. Weight loss, anorexia, malaise and myalgia are common. The clinical features of the connective tissue lesions mentioned above are typical. The arthritis is often classically "rheumatoid." With pericarditis the usual pain is frequently present, i.e., substernal, throbbing or boring, aggravated by twisting, breathing, bending forward, or swallowing. Pleural effusion is much more common than ascites.

The typical butterfly lesion consisting of confluent scaly erythematous macules and papules appears at some time in about half of the patients. (See Figure 2.) The eruption may only be a transitory faint erythematous blush lasting a few weeks with minimal scaling

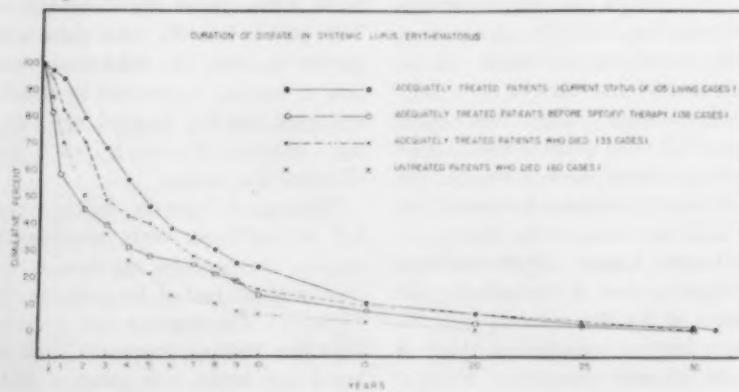
and no atrophy. Acute erythematous maculopapular lesions which blanch may occur on the extremities and not on the face. Classic discoid type skin lesions may appear in the systemic form of the disease. Another cutaneous change which has received little attention is the appearance of hyperpigmentation in the involved areas, or all over the body prior to and during hormonal therapy. At times, some of the patients resemble Addisonians because of skin but not mucous membrane pigmentation. The photosensitivity of the rash is well known. Associated with a flare-up of the skin lesions, there is often dissemination. Patients should be advised to avoid sunlight.

Haserick and his co-workers have pointed out the frequency of grand mal epilepsy as a premonitory as well as a late manifestation in lupus erythematosus.<sup>22</sup> Patients may have seizures for many years prior to the development of other changes due to lupus or their fits may disappear only to have the L. E. process invade another organ. The cerebral lesions are due to lupus angiitis and if severe enough they cannot be re-

versed by hormonal therapy. Since the advent of the antibiotics most lupus patients have died of either cerebral or renal involvement rather than secondary infections.<sup>23</sup>

It has recently been shown that acquired hemolytic anemia may be an initial manifestation of lupus and the only way to diagnose it at this point is by the finding of the L. E. cells.<sup>24</sup> Thrombocytopenia is common also in lupus erythematosus and in many instances it may be the first sign. Because of the fact that lupus may present in the hematological field alone it is suggested that all patients who show hemolytic anemia, thrombopenia, or leukopenia have L. E. cell studies. The author has postulated that hypersplenism of the secondary, or acquired, type may be a causative mechanism of these peripheral blood changes since the bone marrow is normal or hyperplastic. Bizarre coagulation defects with diffuse bleeding may also be due to this illness. A circulatory anticoagulant associated with hypoprothrombinemia has been described as causing some cases of diffuse hemorrhage in S. L. E.<sup>25</sup>

Figure 4.



**Diagnosis** Hargraves' discovery of the L. E. cell has greatly simplified the making of the correct diagnosis, but unfortunately these cells although pathognomonic are found in only about eighty percent of the febrile cases in which the illness has lasted several months. It is unusual to find them in the afebrile patient unless she is under hormonal therapy. The cells often disappear with adequate therapy or with the occurrence of a spontaneous remission.

If a patient shows several of the clinical features outlined above which do not fit into a more common disease pattern, then lupus erythematosus should be considered and appropriate studies performed. Examples are rheumatoid arthritis and epilepsy, leukopenia and nephritis, pericarditis and pleurisy with effusion, gastroenteritis and lupus-like skin lesions, acute or healed. Routine L. E. preparation should also be done in all cases of "rheumatoid fever," "rheumatoid arthritis," "glomerulonephritis" and "nephrosis" since many patients who apparently have an illness which initially resembles these ailments often later develop classic S. L. E. as the cause of these changes. A positive L. E. cell test with the clinical picture discussed above has serious prognostic significance. Patients with apparent typical rheumatoid arthritis have been reported to show L. E. cells in as high as 25% of cases in various clinics.<sup>20</sup> The course of these cases is different from the patient without L. E. cells. The former have multisystem disease characteristic of S. L. E. although the disease in this type of patient is not as malignant as most cases of the acute disseminated form.<sup>21</sup>

Numerous techniques have been devised for the induction of L. E. cells.

In a comparative study of the different methods of performing these tests the author found that the most sensitive technique was the following:<sup>22</sup>

1. Place 10 cc. of venous blood in a test tube containing 0.75 mgm of aqueous heparin (3 drops of 10 mgm/cc obtained through a 21 gauge needle) and 10 glass beads 4 mm. in diameter.
2. Incubate at room temperature for 30 minutes.
3. Rotate in a modified Shen type rotator which holds 4 standard test tubes or a blood pipette rotator. The machine utilized by us was built to rotate at 50 RPM. Trauma can be accomplished in other ways such as by taping the test tube to an ordinary blood pipette shaker for a comparable length of time. However, the results are not quite as satisfactory.
4. Remove the tube from the rotator or shaker and leave it at room temperature for one hour.
5. Centrifuge tube at 1000 RPM for five minutes or until there is a clear separation of the three layers.
6. Remove with a Wintrobe pipette the supernatant plasma and discard it.
7. Take 1 cc. of the buffy coat and place it into a Wintrobe tube.
8. Centrifuge the Wintrobe tube at 1000 RPM for five minutes or until a separation of the three layers is obtained.
9. Carefully aspirate the buffy coat into the pipette and then smear it on glass slides. In order to make a thin section of the smear, push the smearing slide forward and then pull it backward over one

half the width of the blood film. This enables one to better study the cytology when the buffy coat is very rich in leukocytes.

10. Stain preparation with Wright's stain in the usual manner.
11. Examine the film, especially at the edges for at least 10 minutes under oil immersion lens. If any abnormalities are found, review the slide for a longer period and make further preparations.

Although the performance of the test is a simple procedure, the interpretation is difficult. In order to call a preparation positive, classic L. E. cells must be found. These are usually polymorphonuclear leukocytes which have engulfed a homogeneous mass of bluish staining material. The inclusion body must not have any chromatin structure. See Figure 3. Because of the variability in staining characteristics of L. E. cells and similar appearing nonpathognomonic cells which contain phagocytized nuclei with minor chromatin alteration, it is suggested that the slides be referred to a pathologist for interpretation.

A positive L. E. cell preparation is diagnostic. Although L. E. cells have been reported to occur in other diseases, in the author's experience and that of others, the finding of typical L. E. cells is pathognomonic.

**Treatment** The chronic discoid form of the disease responds dramatically in all cases to treatment with antimalarials. The patients with more extensive skin lesions do not have as complete clearing as those with fewer lesions. Maintenance doses of antimalarials are necessary to prevent cutaneous relapse in most cases. The most commonly employed drug in this group is chloroquine (Aralen).<sup>®</sup> The usual dose is two 0.25

gram tablets daily. If there is no response within one to two weeks the dosage can be increased to 1.0 grams per day or another agent added. Other useful drugs in this group are amodiaquin (Camoquin)<sup>®</sup> 0.2 gm tablets b.i.d., hydroxychloroquine (Plaquenil)<sup>®</sup> 0.2 gm tablets b.i.d. and atabrine 0.1 gm b.i.d. Rarely, aplastic anemia has been reported with this latter drug. Frequent hemograms should be done while the patients are taking all these chemicals. When an adequate remission is obtained cautious withdrawal of the medication is undertaken. In addition to the improvement of the cutaneous lesions there is a disappearance of the patient's systemic complaints as well.

The problem of therapy in the systemic form of the illness is a difficult one.<sup>23</sup> There is an incidence of thirty-nine percent spontaneous remissions in these patients with rest and salicylates alone. It is the author's feeling that the least potent therapeutic measures necessary to control this chronic systemic illness should be employed. If the presenting problem is a false-positive serologic test for syphilis in an asymptomatic patient with perhaps a few L. E. cells, then no therapy is necessary but the patient should be closely observed. If the main complaint is a mild rheumatoid arthritis or a rheumatic fever-like picture, this often can be adequately controlled by bed-rest and salicylates, which should be increased to the point of salicylism. The frequent use of these drugs should be encouraged, since they reduce the requirements for antimalarials and steroids, and in my experience, none of the patients has been allergic to them. Bed-rest alone is helpful in controlling symptoms in the active stage of the disease, but if a remission does not

ensue after several weeks of rest more vigorous therapy should be instituted. If salicylates and rest fail or if cutaneous lesions are present, then antimalarial therapy as outlined above should be added into the treatment regimen. When both these measures are inadequate, or if the patient is critically ill, or severely anemic, steroid treatment should be started.

The general plan which has been followed in using steroids is to start with an adequate dose, which varies with the severity of the illness—usually 300 mgms per day of cortisone, 240 mgms of hydrocortisone, or 40 mgms per day of prednisone or prednisolone. It is the author's feeling that ACTH has little place in the therapy of a chronic disease with adrenal hormones, and that the evidence of *permanent* adrenal suppression after the cessation of long-term steroid maintenance is inadequate. The choice of hormone to be used depends upon the patient's cardiorenal status. If there is a great deal of sodium retention, then prednisone is the drug of choice. Hydrocortisone has less mineral corticoid retention than cortisone and is useful for milder instances of cardiorenal damage. Prednisolone in my experience is not as potent an anti-inflammatory agent for lupus as prednisone and has all the undesirable side effects of the latter, namely, increased incidence of peptic ulceration and diabetes. Hydrocortisone is usually the drug of choice. It is a physiological agent and all patients respond to it whereas occasionally some show no response to the unsaturated steroids, prednisone or prednisolone, in doses which are more than adequate in the average similar case.

It is essential on any long-term hormonal therapy program such as this

that the patient be placed on anticholinergic drugs, antacids, and frequent feedings to prevent ulceration until the doses of hormone are reduced to less than 50 mgms per day of cortisone or its equivalent. Aristocort® (Lederle Laboratories) is a new unsaturated adrenal steroid which has no ulcerogenic potency in our studies thus far following a group of twenty-eight patients with routine upper gastrointestinal series, gastric analyses and uropepsins. The dosage on a milligram basis is similar to prednisone. Some of the patients have more of a sense of well being and physically are better than when they were on the older steroids. Our experience with this hormone is limited to only a maximum of ten months followup. Unfortunately the cutaneous side effects such as moon face, hirsutism, striae and ecchymoses seem to be more marked with this steroid. Several patients have developed muscular weakness limited primarily to the anterior thigh muscles with inability to climb stairs or rise from a chair without using their arms. The medication was discontinued and the patient placed on another steroid. Within several weeks this symptom disappeared.

The dose of steroid may be increased within twenty four-forty eight hours if the clinical improvement is not adequate. We have given as much as 4,000 mgms of cortisone per day for six weeks to control crises of lupus erythematosus. The amount of steroid which causes both symptomatic improvement and a fall in temperature to normal should be maintained for days to weeks. When there is improvement in all abnormal physical findings and the anemia is corrected then the dose is reduced. If persistent uremia is present the anemia cannot be greatly

improved. Most patients will become Cushingoid after several weeks' treatment, even on the newer hormones. They are best maintained with a mild Cushingoid appearance until an almost full clinical and laboratory remission is produced and maintained. Cautious withdrawal of steroids is then started. The dose is tapered about ten per cent every few weeks while closely observing for signs of relapse. Steroids can be completely discontinued in almost forty per cent of patients in whom it was necessary to start these hormones. This therapy should not be stopped until at least three months have elapsed from the beginning of treatment.

If the patient has extensive renal damage with edema which is not benefited after two or more months of adequate steroid therapy, then nitrogen mustard intravenously is helpful.<sup>21, 22</sup> It is usually given to adults as a single intravenous injection of twenty milligrams (methyl-bis (B-chloroethyl) amine

hydrochloride) (Mustargen)® in the usual manner after sedation.

The most pronounced effects occur in the very edematous nephrotic, who often within a few days to two weeks after receiving the drug develops a marked diuresis. These patients had anasarca resistant to mercurials. Active systemic lupus erythematosus, without renal damage is not benefited by this type of treatment.

Figure four illustrates graphically the duration of the disease, both treated and untreated, in a series of one hundred and ninety-eight patients with the systemic form of the illness. The lives of these patients are definitely prolonged by this form of therapy. The median duration of life of fifty-nine untreated or inadequately treated patients at this hospital was twenty-four months. In the present series of one hundred and thirty-eight adequately treated patients ill for twenty-four months or more, less than ten per cent have died.

### Summary

*Lupus erythematosus is a common disease which has a wide clinical spectrum ranging from the mild form with systemic complaints, namely, discoid lupus erythematosus, to the malignant disseminated type or systemic form. The evidence for the unitary theory of these forms has been presented in this paper.*

*The discovery of the L. E. cell has greatly expanded the breadth of our concept of the systemic form which may resemble classic rheumatoid arthritis, rheumatic fever or various types of nephropathy. At our institution disseminated lupus is more fre-*

*quent than pernicious anemia, acute leukemia, muscular dystrophy, and multiple sclerosis and as common as acute rheumatic fever.*

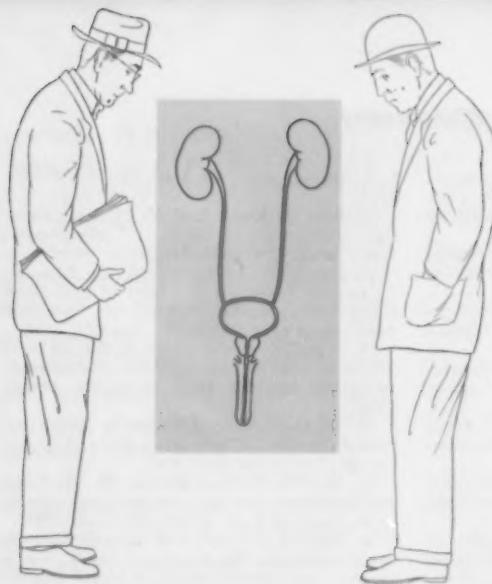
*Antimalarial therapy has provided an almost specific therapeutic agent for the discoid type of the disease and the milder systemic ones. With the combined use of antimalarials and steroids the prognosis in the systemic form has been so greatly improved that whereas formerly fifty per cent of the patients died within two years of onset of their first symptoms now only ten percent expire within that length of time.*

## Bibliography

1. Dubois, E. L. The effect of the L. E. cell test on the clinical picture of systemic lupus erythematosus. *Ann. Int. Med.* 38:1265-1294, June, 1953.
2. Cazenave, A. and Schedel, H. *E Abrégé pratique des maladies de la peau*. 2nd Ed., Paris, 1833, as quoted by Baehr, G., and Jarcho, S.: *Lupus erythematosus disseminatus* from the point of view of internal medicine. *Oxford Medicine* 4:44(66), 1950.
3. Kierland, R. R. Classification and cutaneous manifestations of lupus erythematosus. *Proc. Staff Meet. Mayo Clin.* 15:675, 1940.
4. Kaposi, M. Neue beiträge zur kenntniss der lupus erythematosus. *Arch. f. Dermat. u. Syph.* 4:36, 1872.
5. Osler, W. On the visceral complications of erythema exudativum multiforme. *Am. J. M. Sc.* 110:629-646, Dec., 1895.
6. Libman, E. and Sacks, B. A hitherto undescribed form of valvular and mural endocarditis. *Arch. Int. Med.* 33:701-737, June, 1942.
7. Baehr, G., Klemperer, P. and Schifrin, A. Diffuse disease of the peripheral circulation usually associated with lupus erythematosus and endocarditis. *Tr. A. Am. Phys.* 50:139-155, 1935.
8. Klemperer, P., Polleck, A. D. and Baehr, G. Pathology of disseminated lupus erythematosus. *Arch. Path.* 32:569-631, 1941.
9. Jarcho, S. Lupus erythematosus associated with visceral vascular lesions. A series of autopsied cases. *Bull. Johns Hopkins Hosp.* 59:262-273, 1936.
10. Ginzler, J. M. and Fox, T. T. Disseminated lupus erythematosus. *Arch. Int. Med.* 65:26-50, 1940.
11. Klemperer, P., et al. Cytochemical changes of acute lupus erythematosus. *Arch. Path.* 49:503-516, May, 1950.
12. Hargraves, M. M., Richmond, H. and Morton, R. Presentation of two bone marrow elements: The "Tart" cell and the "L. E." cell. *Proc. Staff Meet. Mayo Clin.* 23:25-28, Jan. 21, 1948.
13. Heserick, J. R., Lewis, L. A. and Bortz, D. W. Blood factor in acute disseminated lupus erythematosus: I Determination of gamma globulin as specific plasma fraction. *Am. J. M. Sc.* 219:660-663, June, 1950.
14. Heserick, J. R. and Lewis, L. A. Blood factor in acute disseminated lupus erythematosus: II Induction of specific antibodies against the L. E. blood factor. *Blood* 5:718-722, Aug. 1950.
15. Dubois, E. L. Simplified method for the L. E. cell test. *Arch. Int. Med.* 92:168-184, Aug. 1953.
16. Rohn, R. J. and Bond, W. H. Some supravital observations on the "L. E." phenomenon. *Am. J. Med.* 12:422-432, Apr., 1952.
17. Hench, P. S., Kendall, E. C., Slocumb, C. H. and Polley, H. E. Effects of Compound E and ACTH on rheumatoid arthritis. *Proc. Staff Meet. Mayo Clin.* 24:181-197, April 13, 1949.
18. Dubois, E. L. and Martel, S. Discoid lupus erythematosus: An analysis of its systemic manifestations. *Ann. Int. Med.* 44:482-496, March, 1956.
19. Walker, S. A. and Benditt, E. Serum proteins in diseases of connective tissue. *J. Invest. Dermat.* 14:113-120, Feb., 1950.
20. Rein, C. R. and Kostant, G. H. Lupus erythematosus: Serologic and chemical aspects. *Arch. Derm. & Syph.* 61:393-403, June, 1950.
21. Huff, E. F., Taylor, H. L. and Keys, A. Observations on the peripheral blood flow in chronic lupus erythematosus. *J. Invest. Dermat.* 14:21, 1950.
22. Russell, P. W., Heserick, J. R. and Zucker, D. M. Epilepsy in systemic lupus erythematosus. Effect of cortisone and ACTH. *Arch. Int. Med.* 88:78, 1951.
23. Dubois, E. L. Systemic lupus erythematosus. Recent advances in its diagnosis and treatment. *Ann. Int. Med.* 45:163-184, Aug., 1956.
24. Dubois, E. L. Acquired hemolytic anemia as the presenting syndrome of lupus erythematosus. *Am. J. Med.* 12:197-204, Feb., 1952.
25. Lee, S. L. and Sanders, M. A disorder of blood coagulation in systemic lupus erythematosus. *J. C. I.* 34:1814-1822, Dec., 1955.
26. Friedman, I. A., et al. The L. E. phenomenon in rheumatoid arthritis. *Ann. Int. Med.* 46:1113-1136, June, 1957.
27. Klevits, J. H., et al. Rheumatoid arthritis and the positive L. E. cell phenomenon. *Ann. Rheum. Dis.* 15:211-216, Sept., 1956.
28. Dubois, E. L. and Freeman, V. A comparative evaluation of the sensitivity of the L. E. cell test performed simultaneously by different methods. *Blood* 12:657-670, July, 1957.
29. Dubois, E. L. Nitrogen mustard in treatment of systemic lupus erythematosus. *Arch. Int. Med.* 93:667-672, 1954.

### Box 138

U S C School of Medicine  
1200 N. State St.  
Los Angeles 33, Calif.



## Urinary Symptoms in

**T**he man who is progressing thru the sixth and seventh decade of life begins to notice diminished libido, signs of impotence, increased frequency of voiding, nocturia, slowing of the stream in size and force, and quite frequently, a marked increase in hesitancy. The symptoms are slow in onset and to the average man they are not particularly noticeable until they are severe. He then remembers, "As a man gets older, such things are supposed to happen," but he never associates these symptoms as being the cause of his weight loss, draggy, sluggish and worn down feeling.

The male patient fifty years of age or above appears in the general practitioner's office complaining of weakness, lassitude and weight loss. Quite frequently the physician checks his

blood pressure, which is usually a little high or low. Bowel movements may be normal or constipated, and when asked if he passes his water alright, he says, "Yes". Therefore, he receives medicine for his blood pressure and is to return in two weeks. At this time he is feeling better, so he receives more medicine.

Now, the mistake of the above incident is failure to take a good history, and do a physical examination including a careful rectal examination, and urinanalysis. Physicians, due to their busy schedules, are prone to make a diagnosis on the patient's age, complaints, and mental condition. For this, the primary cause goes unnoticed. One must delve into the patient's history and ask direct questions, such as: "How many times daily do you have to void?" "Does the stream start with ease?" "Do

WILLIAM S. JASPER, SR., M.D.

Staff urologist at Lancaster Fairfield Hospital, Lancaster, Ohio and Mount Saint Mary Hospital, Nelsonville, Ohio

## the Elderly Male

you think you empty your bladder?" "Is the stream large or small?" "Does it drip?" "Do you ever see any blood?" "How many times do you get up at night to void?" Any one or two affirmative answers may be a clue to the cause of trouble.

The patient who has increased frequency, nocturia of three times or more, and has to strain to void does not rest well. Therefore, he is tired, weak, and loses weight. The patient who does not completely empty his bladder may slowly be developing an elevated blood urea nitrogen, and hence show signs of mental disturbance. Those losing their sex capacities also become quite worried and mentally disturbed.

In the course of the physical examination, which may be quite enlightening. One may discover a tumor of the

rectum, or enlarged prostate. The size of the prostate does not always indicate the degree of prostatism. The fact that the prostate feels small does not mean that the median lobe is not enlarged and compressing the bladder neck, producing obstruction.

However, it may be quite large and when palpating the prostate one must be impressed by its consistency (hard, firm or soft) and its size (longitudinally or transversely).

In contrast to the above, we have the active male. He is very conscious of his urinary bladder symptoms and is embarrassed by his increased visits to the bath room. This patient is an acute problem to the general practitioner and should be referred to the urologist immediately. The first class of patient should also be referred to the urologist, who, if a urinary tract problem exists, will decide by his criteria the therapy indicated.

An analysis of symptoms and associated conditions that contribute the same symptoms must be carefully checked. The following is a classification of the symptoms and the conditions that produce these symptoms.

- Increase diurnal frequency
  - a. Infection, b. Bladder calculus, c. Diabetes, d. Chronic nephritis, e. Diuretic drugs.
- Increase nocturnal frequency (Nocturia)
  - a. Physiological due to fluid intake in evening, b. Enlarged prostate, c. Infection, d. Cardiac diseases, e. Arteriosclerosis, f. Diabetes, g. Insomnia, h. Diuretic drugs.
- Difficulty of urination with pain (Dysuria), usually of obstructive nature
  - a. Stricture of urethra, b. Enlarged

CASES	TREATMENT	5 YR. SURVIVAL		10 YR. SURVIVAL		SERIES
		10%	29%	31.2%	43.6%	
273	None					(Nesbit & Plumb) <sup>6</sup>
63	Stilbestrol only	29%				(Nesbit & Baum) <sup>9</sup>
183	Orchidectomy only		31.2%			(Nesbit & Baum) <sup>9</sup>
78	Stilbestrol and Orchidectomy		43.6%			(Nesbit & Baum) <sup>9</sup>
31	Palliative, TUR, Stil- bestrol and Orchidectomy	53%		22%		(Barnes) <sup>10</sup>
56	Radical Perineal Prostatectomy		64.3%			(Kimbrough) <sup>11</sup>
79	Radical Perineal Pro- statectomy (Cancer rectally confined to the Prostate)	61%		37%		(Jewett) <sup>6</sup>
76	Total Perineal Pro- statectomy (Cancer rectally confined to the Prostate)	63%		34%		(Turner & Bell) <sup>12</sup>
41	Radical Perineal Pro- statectomy (Cancer microscopically con- fined to the Prostate)			49%		(Jewett) <sup>6</sup>
53	Total Perineal Prosta- tectomy (Cancer microscopically con- fined to the Prostate)	68%		43%		(Turner & Bell) <sup>12</sup>

prostate, c. Calculus in bladder, d. Tumors of bladder, e. Infections producing swelling in prostatic urethra or bladder neck, f. Spasm of sphincter of bladder due to spinal cord disease.

- Interrupted stream (Hesitancy), due to obstruction
  - a. Stricture of urethra, b. Enlarged prostate, c. Calculus in bladder, d. Tumors of bladder, e. Infections producing swelling in prostatic urethra or bladder neck, f. Spasm of sphincter due to spinal cord disease.
- Size of stream
  - a. A small stream is associated with

obstructive lesion in bladder neck or urethra.

- Inability of bladder to completely empty itself (Residual Urine)
  - a. Obstruction (stricture, enlarged prostate, tumor, infection or foreign body), b. Paralysis due to spinal disease (Atonic bladder).
- Blood in urine (Hematuria)
  - a. Infection, b. Calculi (renal, ureteral, vesical, prostatic or urethral), c. Prostate (Benign or malignant), d. Tumors (renal, ureteral, vesical or urethral), e. Blood dyscrasia, f. Idiopathic.

The remainder of this discussion will

be limited to the insidious diseases of the prostate and associate structures which precipitate the male patient's loss of well being.

It is well to state that the symptoms are principally those referable to the bladder, rather than to the prostate, whether it is infection, fibrosis, prostatic hypertrophy, calculi, or carcinoma. These symptoms are usually on the basis of a mechanical process due to enlargement of the structure in a small confined location.

Associated with prostatic disease, there may well be other systemic disease processes such as: Arteriosclerosis, cardiovascular disease, diabetes, a blood dyscrasia, neurological disease, metabolic disease and psychological diseases, which may be contributing factors.

**Infections** Chronic infections of prostate gland, seminal vesicles, ejaculatory ducts or urethra may be the cause of mild urinary symptoms. The presence of infection in any one of these structures does not necessarily mean secondary infection or other pathological conditions in any one of other structures. However, inflammatory reactions in the seminal vesicles commonly accompany prostatic carcinoma, prostatic or periprostatic abscess.<sup>1</sup>

**Fibrosis** A replacement fibrosis develops in these structures and may or may not be associated with chronic infection. Fibrotic proliferation is considered to be a part of the aging process and not the end result of inflammatory disease.<sup>1</sup>

**Calculi** Calculi in the seminal vesicles or prostate can be diagnosed by X-ray. In most cases these are considered asymptomatic, but here again the minor symptoms may be the tip

off of something to follow. Such as; an indication of existing prostatitis, vesiculitis or obstruction to the vas deferens.

### **Benign Prostatic Hypertrophy**

After fifty years of age this is the most common condition producing symptomatology in the male. To this we apply the term "prostatism." This means increased frequency of urination, most noticeable at night with nocturia more than two times, dysuria or painful and difficult urination, hematuria in about 20 to 24 per cent of the cases, and systemic symptoms of digestive impairment, malaise and debility but without cachexia and emaciation as seen in malignant disease.<sup>2</sup>

At Ohio State University Hospital from 1941 to 1953 there were 2,417 prostatic operations. Of these 2,102 cases or 86.9% were benign lesions.<sup>2</sup>

The symptoms are only present when the prostate produces obstruction at the vesical neck. This obstruction depends on the location of the enlargement and not on the size of the prostate gland. When the prostate produces obstruction sufficient to have a residual urine of 50 to 75 cc, danger is imminent, even if the symptoms are very mild. The dangers of infection and uremia are ever present if the diagnosis is not made and nothing done to prevent their occurrence.

**Carcinoma** On routine post-mortem cases the incidence of carcinoma of the prostate has been reported as 16 to 20 per cent in men over fifty years. This has not been clinically significant in that the majority of these individuals did not die of carcinoma and probably never would have.

On 4,622 reported surgical prostatic cases with urinary symptoms, 553 cases

CASES	TREATMENT	5 YR. SURVIVAL	10 YR. SURVIVAL	SERIES
231	None .....	6%		[Nesbit & Plumbe] <sup>6</sup>
52	Stilbestrol only .....	9.7%		[Nesbit & Baum] <sup>6</sup>
172	Orchiectomy only ..	21.6%		[Nesbit & Baum] <sup>6</sup>
35	Stilbestrol and Orchiectomy .....	20%		[Nesbit & Baum] <sup>6</sup>
44	Palliative, orchidec- tomy and estrogens ..	25%		(Kimbrough) <sup>7</sup>
48	Radical Perineal Pro- statectomy (Cancer not confined to the Pro- state on rectal palpa- tion) .....		12.5% (Jewett) <sup>8</sup>	
150	Palliative, TUR, estro- gens, orchidectomy, X- ray. (Positive Patho- logical Diagnosis) ..	60%	19%	(Burford & Burford) <sup>9</sup>

or 11.9% had carcinoma.<sup>4</sup> Of the group at Ohio State University,<sup>3</sup> 315 cases or 13.07% out of 2,417 prostatic surgical cases had carcinoma.

The first suggestion of carcinoma of the prostate may be mild prostatism, sciatica, back pain, weight loss or anemia. The only clinical way of diagnosing carcinoma of the prostate is by digital rectal examinations.

Radical surgery has been feasible in 54.5% of such patients at Walter Reed Army Hospital, due to annual physical examinations, in which digital palpation of the prostate is required.<sup>5</sup>

At the Brady Urological Institute in the Johns Hopkins Hospital 19% of such patients were considered suitable for radical surgery. These patients were seen because of some illness or presenting complaint, whereas those at Walter Reed were seen on annual physical examinations.<sup>6</sup>

The practitioner must be alert to these facts. When clinical symptoms are

present, only 5% of the patients are amenable to surgical cure.<sup>7</sup>

Other means of diagnosis such as needle or perineal biopsy, Papanicolaou study of prostatic secretions and acid phosphatase determinations of prostatic secretions have all been added to the armamentarium of aids in the early diagnosis of carcinoma of the prostate.

Distant metastasis to bone, lungs, liver and adrenal in that order usually depends on the duration of the carcinoma. However, in some rare cases the metastasis may occur early in the disease. This makes the value of X-ray to the diagnosis of bone and lung metastasis early in the disease imperative.

The early diagnosis of carcinoma of the prostate by any of the above ways mentioned leads to increased longevity if treated by one or other of the recognized procedures. The treatment must be determined by a study of each individual case and the method used.

Tables one and two show the expected survival of people with prostatic carcinoma under the present day therapy. Compare this with people in the general population from the same age group without prostatic carcinoma who have a ten year survival rate of 53%.

**Discussion** The general practitioner sees this group of patients with minimal symptoms in his office before the specialist and must make the initial diagnosis and decision. If he can treat the patient without the dangers of complications or missing a serious diagnosis, (carcinoma or uremia), he should do so. I have seen patients who have been receiving prostatic massages when they had carcinoma of the prostate, also patients treated for mental disorders or arteriosclerosis when the blood urea nitrogen was above 100.

I want to emphasize that the key to the problem is the adequate urological diagnosis of the symptoms on the basis of the history, physical findings, laboratory determinations and X-rays. This will lead to the increase longevity and comfort of the patient.

It is not the patient with the acute severe symptoms of the urinary tract that is difficult to diagnose, but those quiet, sneaking insidious symptoms and findings which create the real danger signals. "As a man gets older, these things are supposed to happen," this is true, but to the physician, these things that are supposed to happen, if recognized, will prolong the patients life and comfort of living.

On reviewing tables one and two if the diagnosis of carcinoma of the prostate is made early before metastasis, by utilizing radical surgery, the 10 year survival rate approaches 40 to 50 per

cent. It also proves that stilbesterol and orchidectomy in combination gives a better survival rate than either one alone. The tables also show that the survival rate of radical prostatic surgery patients begin to approach the 53% 10 year survival rate for the average population, if no metastasis is present when the diagnosis is made. This then makes it a must to do a rectal examination on every male patient.

The treatment of all these conditions can be placed under four headings.

- *Medical Therapy* The use of drugs, antibiotics, mechanical therapy (prostatic massage) and thermal therapy.

- *Surgical Procedures* Here the type of surgery must fit the disease, and the patient. The type of infection, obstruction and size of prostate, benign or malignant is to be considered. The patient's age, vascular status, nutrition, mental condition are never to be overlooked. The fact that a patient has a very large prostate is not an indication for surgery. The symptoms, physical findings, laboratory studies and X-rays must set the stage for the final decision.

- *Hormonal Therapy* This is the type of treatment which was discovered in 1941 by Huggins and consists of the use of the estrogens and the elimination of androgen secretion in the treatment of carcinoma of the prostate. This has increased the longevity of these patients.

- *Radiation Therapy* A type of radioactive therapy in the form of X-ray, radiation seeds or liquid radioactive material. There still exists a difference of opinion in this field as to its value, and the final decision is up to the urologist in each individual case.

## Summary

*I have presented a problem in the diagnosis and treatment of the male patient above fifty years of age who presents himself in the physician's office with minor complaints and symptoms of mild prostatism or bladder irritability.*

*A classification of these symptoms and etiological factors is given for*

*study and consideration.*

*Then follows a discussion of the prostate and its associate structures with reference to infections, fibrosis, calculi, hypertrophy and carcinoma. How the physician can evaluate the patient and develop an idea of the type of therapy that may be indicated.*

## References

1. Seminal Vesiculitis—CALMAS, J. A. *Jour. of Urol.* 74:638-645 Nov. 1955.
2. Prostatism—A Conservative Approach, BEATTY, E. P. *Urol. & Cut. Rev.* 52:22, 1948.
3. Statistical study of 2417 Surgical Prostatic Cases Ohio State University, Department of Surgery, Urological Section JASPER, Wm. S. Sr., M.D.—Not published.
4. Endocrine Therapy of Prostatic Carcinoma, RAY, Edward H., M.D. *J.A.M.A.* 163:1008-1010, March 23, 1957.
5. Carcinoma of the Prostate—VAN BUS-KIRK, K. E. KIMBROUGH, J. C. *Jour. of Urol.* 71:742 June 1954.
6. Radical Perineal Prostatectomy for Carcinoma—JEWETT, Hugh J. *J.A.M.A.* 156:1039-1041 Nov. 13, 1954.
7. Carcinoma of the Prostate—Five-year Fol- low-Up of Patients Treated by Radical Surgery—KIMBROUGH, J. C. *Jour. of Urol.* 76:287-291, Sept. 1956.
8. Prostatic Carcinoma—NESBIT, R. M., PLUMB, R. T. *Surgery* 20:263, 1946.
9. Endocrine Control of Prostatic Carcinoma—NESBIT, Reed M. BAUM, Wm. C., *J.A.M.A.* 143:1317-1320 August 12, 1950.
10. Results of Palliative Treatment of Early Carcinoma of the Prostate—BARNES, Roger W. *Jour. of Urol.* 7:489-490 Sept. 1953.
11. Cancer of the Prostate—BURFORD, C. E., BURFORD, E. H. *Missouri Medicine* 44:445, June 1954.
12. A study of 229 Consecutive Cases of total Perineal Prostatectomy for Cancer of the Prostate—TURNER, Roderick D. and BELT, Elmer *Jour. of Urology* 77:62-77 Jan. 1957.



## Clini-Clipping

**EPISIOTOMY**  
Incisions for cutting the peri-  
neum to prevent lacerations:

1. Medium
2. Mediolateral
3. Right lateral
4. Left lateral



## Role of Radiotherapy in Carcinoma of the Endometrium

HOWARD B. HUNT, M.D.

From University of Nebraska  
and Nebraska Methodist Hos-  
pitals, Omaha, Nebr.

**C**arcinoma of the endometrium shows a progressive increase of relative incidence with lengthening of the average life span of our women to seventy years. The ratio of endometrial, to cervical uterine cancer, at the University Hospital and Nebraska Methodist Hospital was 1 to 3.5 in 1936-40. By 1951-55 the ratio had changed to 1 to 2 at the University Hospital, and in our private practice 1 endometrial to 1.7 cervical lesions. Studies at the Lincoln (Nebraska) General Hospital have shown an actual preponderance of endometrial carcinoma in the ratio of one hundred and forty-four endometrial to ninety-five cervical cases.<sup>12</sup> Current text books<sup>13</sup> and earlier reports, show ratios of 1 endometrial to 5 and even 8 cervical lesions.

Deaths from cancer of the uterus are declining in Nebraska. According to statistics provided by the Nebraska State Department of Health<sup>2</sup> during 1944-48 there were 708 deaths attributed to cancer of the uterus and from 1949-53 only 564 such deaths. This indicates a decrease in deaths from uterine cancer of about four per cent per year. In terms of deaths per 100,000 total population, cancer of the uterus decreased from 11.5 to 8.4 in Nebraska over this period of four years. Lowering of the death rate from uterine cancer is attributed to some reduction in cervical carcinoma from better postpartum care, and also due to the earlier diagnosis, and more effective treatment of both cervical and endometrial cancer.

Improved results from radiothera-

peutic treatment of carcinoma of the cervix uteri are exemplified in our data at the University of Nebraska and Nebraska Methodist Hospitals.<sup>8</sup> At the University Hospital the absolute five-year survival rate for cervical carcinoma treated by radiotherapy alone from 1931-36 was only 20.5 per cent whereas in the 1945-47 period the five year survival rate had risen to 43.2 per cent. The absolute five year survival for patients cared for in private practice was 52.7 per cent during 1937-47 and 57.9 per cent for those 107 cases unmodified by prior surgery or radiotherapy. During 1948-51, absolute five-year survival was 63 per cent for 98 private cases and 57 per cent for 96 clinic cases. Comparable improvements in results have been reported by many radiotherapists.<sup>7, 18</sup>

Corresponding improvement has occurred in carcinoma of the endometrium treated by radiotherapy and by other methods during the past twenty-five years. Our five year survival rate for endometrial carcinoma treated during 1930-36 was only 35 per cent.<sup>15</sup> During the 1937-48 period (See table I) our five year survival rate had risen to 61 per cent including all 95 cases seen regardless of stage of disease and modification by prior therapy. The absolute 5 year survival rate for 64 unmodified cases, combining clinic and private practice was 66.6 per cent during 1937-48 and 80 per cent for the 20 unmodified cases seen in private practice. McKelvey<sup>14</sup> reports an increase in five year survivals for carcinoma of the endometrium from 42.5 per cent during 1928-38 up to 62 per cent during 1941-46 for cases unmodified by prior therapy. Heyman<sup>6</sup> and Kottmeier<sup>10</sup> at the Radiumhemmett in Stockholm show an improvement of five-year control of

disease from 46.9 per cent during 1914-35 up to 61.8 per cent during 1936-48. These cases were treated by primary radiotherapy, combined with post-irradiation hysterectomy in about 16 per cent of cases considered persistent following irradiation. Improvement in our five survivals from carcinoma of the endometrium from 35 per cent in 1936 up to 61 per cent in 1948 resulted from relatively more favorable cases, better radiotherapeutic methods, and increased utilization of hysterosalpingo-oophorectomy following radiotherapy in operable cases.

**Radiotherapeutic Procedure for Endometrial Carcinoma** The effectiveness of radiotherapy has been increased 1. by replacement of a single intrauterine tandem by multiple capsules packed into the uterine cavity, 2. by more adequate irradiation to vaginal vault and tract, especially in post operative cases, 3. by the more effective use of external roentgen therapy and 4. by the more accurate calculation and measurement of dosage.

Adequate and homogeneous irradiation of cancer along the uterine wall is best provided by packing the cavity with multiple capsules as advocated by Heyman.<sup>6</sup> His five year results at the Radiumhemmett improved from forty-five per cent with a single tandem procedure up to sixty-five per cent with the multiple capsule technique. The superiority of the multiple capsule method is substantiated by Nolan,<sup>16</sup> Arneson,<sup>1</sup> Loeffler,<sup>13</sup> Costolow<sup>2</sup> and others. The number of capsules and their distribution will vary with the size and contour of the uterine cavity. Total dosage is usually divided between two or more applications spaced at intervals of one to three weeks except in the smallest

TABLE I CARCINOMA OF ENDOMETRIUM. ALL CASES FIVE YEAR SURVIVALS WITH DISTRIBUTION AS TO STAGE AND MODIFICATION BY PRIOR SURGERY OR RADIOTHERAPY

1937-48	NMH (PRIVATE)	UNH (CLINIC)	TOTAL CASES	5 YEAR SURVIVAL CASES	%
<b>Stage I.</b>					
(Clinically lim- ited to Uterus)	26 (23)	33 (26)	59	49	83 %
<b>Stage II.</b>					
(Clinically be- yond Uterus)	16 (6)	20 (3)	36	9	25 %
All cases seen	42 (29)	53 (29)	95	58	61 %
Modified	20 (11)	11 (5)	31	16	51.6%
Unmodified	22 (18)	42 (24)	64	42	66.6%

uteri. Such fractionation of dosage offers the advantages of better tolerance by normal tissues, more homogeneous irradiation, and fewer "hot" spots. Furthermore progressive shrinkage of the tumor following the initial application brings a higher dose to the peripheries of the carcinoma at each subsequent application.<sup>15</sup>

The importance of adequate irradiation of the vaginal vault and walls, has not in the past, been properly recognized in the treatment of endometrial carcinoma.

Vaginal recurrence occurs in about ten per cent of cases following total hysterectomy, according to Ingersoll and Meigs<sup>9</sup> and Dobbie.<sup>5</sup> Dobbie finds that such vaginal recurrences are rather fully prevented by irradiation of the vaginal mucosa to a dose of 5000 "r" by means of radium in a plastic piston applied three to four weeks following surgery.

Fractionated external roentgen therapy is combined with intrauterine and vaginal radium by us in nearly all patients, is most valuable in the instance of large uteri with bulky carcinomas, clinically Stage II patients with suspected extension beyond the uterus, in post-operative cases with possible residual pelvic disease, and in all patients selected for primary radiotherapy. Lampe<sup>12</sup> has shown uterine carcinoma to be eliminated by 4000 roentgens delivered to the mid-pelvis by external roentgen therapy alone, in twenty-seven per cent of patients. His overall five year survival in twenty patients so treated by x-ray and followed by hysterectomy was 83.6%.

If external roentgen therapy alone can effectively suppress uterine carcinoma in one out of four instances, then certainly it is a valuable supplement to intrauterine radium therapy, particularly for the control of outlying extensions

and even some nodal metastases.

**Analysis of Case Material and Discussion** Table I presents the distribution and five year survival rates for all ninety-five patients seen from 1937-48 regardless of stage of disease or acceptance for treatment. The disease has been staged according to Kottmeier.<sup>10</sup> Stage I patients, clinically limited to the uterus, show a five year survival rate of eighty-three per cent. Stage II patients with extension beyond the uterus, as suggested by clinical examination, show a five year survival rate of twenty-five per cent. The unmodified group includes forty-eight patients treated by radiotherapy alone and sixteen treated by radiotherapy followed by surgery giving a combined total of sixty-four patients of whom forty-two or 66.6 per cent survived five years and more. The private group of twenty-two unmodified cases shows eighteen patients or eighty per cent surviving 5 years as compared with fifty-seven per cent for the clinic group during 1937-48. Since that time, University clinic patients have become progressively earlier and more favorable, while private referrals bring more modified and recurrent instances of the disease.

Radiotherapy has been used in the following roles: 1. primary radiotherapy alone, 2. radiotherapy preliminary to total hysterosalpingo-oophorectomy, 3. postoperative therapy within one month following hysterectomy, and 4. therapy to recurrent cancer occurring subsequent to prior hysterectomy or radiotherapy.

Primary radiotherapy alone gave a five year survival rate of 79.3 per cent in Stage I patients, and only 15.6 per cent in Stage II patients leaving much to be desired. Radiotherapy alone is now

restricted to patients having a non-resectable cancer, and those made inoperable because of poor operative risk, or a refusal of surgery. In this series of ninety-five patients, eight died from cardiovascular disease within five years. Patients with endometrial cancer show a constitutional predisposition to obesity, hypertension, cardiovascular disease, and diabetes. There is also an association of carcinoma of the breast in about three per cent, and carcinoma of the ovary in about seven per cent of these patients. Five of the patients in this series presented evidences of metastases beyond the pelvis at the time of their referral.

For some years we<sup>15</sup> have advised hysterosalpingo-oophorectomy in all operable patients within six to twelve weeks following radiotherapy. Post-irradiation hysterectomy is indicated for elimination of possible residual disease, and prevention of later recurrences. Residual cancer is most often encountered with a bulky tumor in a large uterus, with lesions deeply invading the myometrium, and in peripheral recesses of low dosage areas such as the cornua and tubes. The known association of carcinoma of the ovary with endometrial carcinoma in about seven per cent of patients makes oophorectomy, as well as hysterosalpingectomy, necessary. During 1937-48, sixteen patients were treated by radiotherapy, followed by hysterosalpingo-oophorectomy, all of whom survived five years and more. Of twenty-one patients so treated from 1933-48, 20 patients or ninety-five per cent survived five years and more, and this same high survival rate continues in more recent patients. The more extended use of hysterectomy following radiotherapy promises to raise salvage

TABLE II CARCINOMA OF ENDOMETRIUM — UNMODIFIED CASES TREATED BY RADIOTHERAPY FOLLOWED BY HYSTERO-SALPINGO-OOPHORECTOMY AND BY PRIMARY RADIOTHERAPY ALONE

1937-48	AVER. AGE	NMH (PRIVATE)	UNH (CLINIC)	TOTAL CASES	5 YEAR SURVIVAL CASES	%
Radiotherapy followed by Surgery	58	5 (5)	11 (11)	16	16	90-1%
Radiotherapy alone Stage I.	60	10 (10)	19 (13)	29	23	79.3%
Radiotherapy alone Stage II.	69	7 (3)	12 (0)	19	3	15.6%
Unmodified						
Combined	60	22 (18)	42 (24)	64	42	66.6 %
( ) 5 Yr. Survivals		80%	57%			

in Stage I patients, ten to fifteen per cent above that provided by radiotherapy alone, and with comparable improvement in Stage II patients also.

Primary radiotherapy followed by hysterosalpingo-oophorectomy has proved superior to surgery alone in the experience of Randall,<sup>20</sup> Ward,<sup>24</sup> Schmitz,<sup>22</sup> Payne,<sup>19</sup> Scheffey<sup>21</sup> and others. Five year survival rates have increased ten to twenty per cent with the use of radiotherapy six to ten weeks prior to hysterectomy in selected cases as shown in the table below:

	SURGERY ALONE	RADIOTHERAPY PLUS SURGERY
	5 yr. survivals	5 yr. survivals
Randall	60%	81.6%
Ward	43%	72% (Now 80%)
Schmitz (Pers. comm.)	78.5%	90.0%
Payne	80.4%	92.9%

The absolute five year survival rates for carcinoma of the endometrium treated

by surgery alone including all cases seen has not been impressive ranging from thirty-eight per cent up to 66.9 per cent according to the literature as reviewed by Kottmeier<sup>10</sup> in 1954.

Administration of radiotherapy before, rather than after hysterectomy, offers both technical and clinical advantages. Intrauterine placement of radium provides the most effective control of the primary carcinoma, and also delivers significant dosage to the peripheral extensions of disease in the upper posterior pelvis. Delivery of this component of radiotherapy is made impossible after hysterectomy. Preoperative irradiation eliminates carcinoma from the uterus according to histologic study in sixty to ninety per cent of cases according to the adequacy of therapy. In other instances, the carcinoma cells are so devitalized as to reduce the possibilities of secondary implantation and

spread during the operative procedure. The uterus becomes gradually smaller, more mobile, and secondary infection is reduced. Furthermore after six to twelve weeks, post-irradiation congestion has subsided, and no adhesions have yet developed to interfere with the operative procedure. During this interval, the general condition and operability of the patient can be improved, by reduction of weight and betterment of her cardiovascular status. The patient must be made to understand in advance, that hysterectomy must follow radiotherapy, since combined treatment carries a ten to fifteen per cent better prospect of control, than does either surgery or radiotherapy alone.

Patients treated elsewhere by total or subtotal hysterectomy and referred to us within one month for postoperative radiotherapy comprised a group of twenty-three patients of whom sixteen, or seventy per cent lived five years and more.

We believe that these results are now being improved by more adequate initial operative procedures, and by more effective radiotherapy to the vagina in particular. Local vaginal recurrences can usually be controlled by radium or transvaginal x-ray. Unfortunately, most patients referred to us with recurrences

following prior surgery and prior radiation, have shown invasion of outlying pelvic structures and often distant metastases. In view of the known probability of vaginal recurrence developing in about ten per cent of postoperative patients over a period of three months to ten years, a careful long range follow-up program is essential in the management of endometrial cancer. We advise intravaginal radium as prophylaxis against local recurrences, and external radiation against possible peripheral extensions, in patients treated initially by hysterosalpingo-oophorectomy.

Endometrial carcinoma spreads through the uterus by direct extension, along the pelvic and periaortic lymphatics and distantly by the blood stream. Pelvic nodes are involved in about ten per cent of endometrial carcinomas limited to the corpus, and in about twenty-five per cent of cases involving the endocervix (Ingersoll and Meigs.<sup>9</sup>) Kottmeier finds the five year survival rate to be only 32.9 per cent for patients having involvement of both the corpus and endocervix, as compared with 61.8 per cent for lesions limited to the corpus.<sup>10</sup> Distant metastases to the periaortnodes, and to the lungs, bones, liver, brain, and elsewhere are not significantly benefited by radiotherapy.

### Summary

*1. Absolute five year survival rate for endometrial carcinoma treated by radiotherapy at the University of Nebraska and Nebraska Methodist Hospitals has increased from 35 per cent during 1930-36 to 61 per cent for all 95 cases seen during 1937-48 and to 66.6 per cent for all 64 unmodified instances of the disease.*

*2. The five year survival rate for all 22 unmodified private patients was 80 per cent, and for all 59 cases clinically limited to the uterus, 79.3 per cent.*

*3. Our preferred treatment has been radiotherapy followed by total hysterosalpingo-oophorectomy within six to ten weeks and of 21 cases so*

treated during 1935-50, 20 (95 per cent) have survived five years and more. Very early cases are being treated by immediate surgery.

4. Postoperative radiotherapy to the vagina is advised (a) for prophylaxis against vaginal recurrence (10%), (b) control of vaginal recurrence; along with external radiation toward more peripheral extensions.

5. Hysterectomy followed by radiotherapy within one month in 23 cases gave 16 (70 per cent) five year survivals. More adequate initial surgery and more effective radiotherapy to the vagina promises to raise the five year survival rate in such cases to

75 or 80 per cent.

6. Primary radiotherapy without post-irradiation hysterectomy is advised only in cases made inoperable by non-resectable cancer, poor operative risks due to associated disease and refusal by the patient.

7. The relative incidence of endometrial to cervical uterine cancer has risen from 1 to 3.5 in 1940 up to 1 endometrial to 1.7 cervical cases at present.

8. The death rate for cancer of the uterus in Nebraska has reduced from 11.5 to 8.4 per 100,000 total population during the periods 1944-48 to 1949-53.

## Bibliography

1. Arneson, A. N., Stanbro, W. W., and Nolan, J. F.: Use of multiple sources of radium within uterus in treatment of endometrial cancer. *Am. J. Obst. & Gyn.* 55:64-78, Jan. 1948.
2. Chism, C. L., Nebraska State Bureau of Vital Statistics, report of deaths from cancer 1944-53. Personal communication.
3. Costolow, W. E., Nolan, J. F., Budenz, G. C. and Du Sault, L.: Radiation treatment of carcinoma of the corpus uteri. *Am. J. Roentgen.* 71:669-675, April 1954.
4. Deesley, T. J.: Routine measurement of rectal dose in treatment of carcinoma of cervix by radium. *J. Fac. Radiologists.* 5:289-291, April 1954.
5. Dobbie, B. M. Willmott: Vaginal recurrences in carcinoma of the body of the uterus and their prevention by radium therapy. *J. Obst. & Gyn. Brit. Emp.* 60:702-705, October 1953.
6. Heyman, J.: The radiotherapeutic treatment of cancer corporis uteri. *Brit. J. Radiol.* 20:85-91, March 1947.
7. Heyman, J.: Thoughts on forty years of radiation treatment of carcinoma of the uterine cervix. *Am. J. Obst. & Gynec.* 68:480-483, July 1954.
8. Hunt, H. B.: Comparative radiotherapeutic results in carcinoma of the cervix uteri as modified by prior surgery and radiation. *J. Lowe Med. Soc.* 43:403-408, Oct. 1953.
9. Ingersoll, F. M. and Meigs, J. V.: Lymph node dissection for carcinoma of the endometrium. *Proc. of Second National Cancer Conference.* 1952:747-753. *Amer. Cancer Soc. N. Y.* 1954.
10. Kottmeier, H. L.: Carcinoma of the corpus. Its classification and treatment. *Gynec.* 75 or 80 per cent.
11. Kottmeier, H. L.: Carcinoma of female genitalia. Chap. IV. Radiotherapy of carcinoma of the corpus uteri and carcinoma of the corpus and endocervix. p. 96-131. *Williams & Wilkins Co., Baltimore, 1953.*
12. Lampe, I.: Combined surgical and radio-logical treatment for endometrial carcinoma. *Proc. of Second National Cancer Conference.* 1952:753-764. *Amer. Cancer Soc. N. Y.* 1954.
13. Loeffler, R. K.: System of radium distribution for treatment of cancer of the corpus uteri. *Am. J. Roentgen.* 73:425-436, March 1955.
14. McKelvey, J. L.: Studies of treatment problems of adenocarcinoma of the endome-trium. *Jour. Okla. St. M. Assn.* 44:428-432 November 1951.
15. McGoogan, L. S. and Hunt, H. B.: Treat-ment of carcinoma of the fundus uteri. *Arch. Surg.* 56:172-177. February 1948.
16. Nolan, J. F. and Steele, J. P.: Carcinoma of the endometrium: Measurements of the radiation distribution around various multiple capsule applications of radium in irregular uteri. *Radiology.* 51:166-176, August 1948.
17. Novak, E.: *Gynecologic and Obstetric Pathology.* (3rd Edition) *Saunders, Philadelphia, 1952.*
18. Paterson, Ralston: Radiotherapy in can-er of the cervix. *Acta Radiol. Suppl.* 116:395-404, 1954.
19. Payne, F. L.: The role of radiation and of surgery in the management of uterine car-ci-noma. *Surg. Gynec. & Obst.* 94:715-721, June 1952.
20. Randall, J. H., Mirick, D. F. and Wieben, E. E.: Endometrial carcinoma. *Am. J. Obst. & Gynec.* 61:596-602, March 1951.

21. Scheffey, L. C.: The diagnosis and management of uterine malignancy. *West. J. Surg.* 60:144-155, April 1952.

22. Schmitz, H. E., Smith, C. J. and Gajewski, C. J.: Effect of preoperative radiation of adenocarcinoma of the endometrium. *Amer. J. Obst. & Gynec.* 64:952-970, November 1952.

23. Tweeddale, D. N., Gorhey, R. L., Harvey, H. E. and Tanner, F. H.: Cervical vs endometrial carcinoma. *Obs. & Gyn.* 2:623-628, December 1953.

24. Ward, C. V.: Carcinoma of the uterine corpus. *Nebr. St. Med. J.* 40:328-331, September 1955.

Methodist Hospital, Omaha, Nebraska

### Clini-Clipping



#### TINEA PEDIS

- Inflammatory type showing interdigital maceration between 4th and 5th toes.
- Dermatophytid of hand associated with *Trichophyton gypseum* infection of feet.
- Chronic type caused by *Trichophyton purpurea* showing yellow, opaque, brittle involvement of toenails.
- Secondary pyogenic invasion of the tissues in the acute inflammatory type when the term eczematoid ringworm may be appropriately used.

**DONALD C. DURMAN, M.D., F.A.C.S.**  
Saginaw, Michigan

## **ACCIDENT OR INJURY**

**D**uring the past twenty years an increasing segment of our population seems to have developed the philosophy, fostered by an at-times paternalistic government, that the world owes it a living. This philosophy is reflected in the do-less-get-more attitude on the part of some individuals; decreased productiveness of labor; increased unemployment compensation benefits; the tendency to expect payment for every illness or physical abnormality arising during the course of employment, whether or not due to or related to the employment; the frequency of workmen's compensation suits, of suits for real and/or imagined ailments following automobile accidents, and increased findings in favor of the plaintiff in spite of expert objective testimony which did not support the awards.

When medical questions are involved, part of the responsibility for this get-more philosophy rests upon the shoulders

of the physician who inadvertently (it is hoped) encourages the patient in fallacious beliefs and false hopes in the absence of adequate objective grounds for such thoughts. Probably another reason for these claims is the natural tendency of many individuals to attribute abnormal sensations or real illness or disability to an accident and to become firmly convinced that they sustained an injury. It is often also assumed by the doctor, without logical reasoning or giving the matter any thought, that symptoms present following an accident are the result of injury sustained in the accident. There is often a vast difference between accident and injury. Simply because an individual has been involved in an accident does not necessarily mean that he was injured.

In 1955, the National Safety Council reported that there were 1,900,000 industrial accidents in the United States. Slightly over 1,000,000 of these involved

the extremities. Another survey indicated that 17 per cent of all patients visited physicians because of conditions affecting the neuro-muscular-skeletal system. If visits for respiratory conditions and health examinations were excluded the figure was 20 per cent.<sup>1</sup>

Since by all evidence, the diseases and abnormalities of the skeletal system comprise a large proportion of the ills of man, and since many of these conditions follow accidents, the physician should be extremely cautious in assuming that the accident is responsible for the condition or even that injury occurred. It does no one a favor to tell the patient that he was injured when in fact he was not. Except in obvious conditions due to an accident such as fractures, an accurate picture of exactly what happened to the patient at the time of the accident is necessary, to determine whether violence was sustained, and whether it was sufficient, and whether it occurred in a manner necessary to produce the lesion or lesions present in the patient.

Some time ago a group of neurosurgeons in Memphis, Tenn. became concerned about the poor results of treatment of so called "whiplash" injuries of the neck and about the medicolegal implications that followed accidents which could produce these injuries. They found that when they were called upon to give medical opinions incidental to the legal settlement of the accidents, there was a wide divergence among themselves as to the severity of the injury and the future prospect for health. Psychoneurotic symptoms were so prevalent and seemed to be such a dominant factor in these cases that proper evaluation seemed even impossible and tended to underscore the phy-

sicians' difficulty in reaching a degree of unanimity of opinion. In attempting to render a valid opinion, a study was made of one hundred patients previously diagnosed as having "whiplash" injuries whose litigation had been settled. Eighty-eight per cent showed recovery and over half of these had no residual complaints.<sup>2</sup> This study certainly indicates that many of these patients had no organic injury, or nothing more than a minor injury. It was pointed out in this report, that medical literature on the subject was of little help.

As a matter of fact, statements are sometimes made in medical literature which a reader may accept as fact, but which have no basis in scientific evidence. A recent author discussing so called "whiplash" injuries stated that when muscles remain contracted over a protracted period, adhesions develop between the muscle fibers. When this statement was challenged, he admitted that he had not carried out any muscle biopsies, nor did he recall reading any pathologic description of such biopsies. He went on to state that what he had meant was the muscle contracture and limitation of joint range which results, when an extremity is immobilized in a cast for a long time. This is an entirely different matter. We have recently carried out a number of biopsies on muscles which have been contracted and shortened for a long time and in no instance have found any microscopic abnormalities.

Certainly, so called "whiplash" injury if responsible for more than temporary reversible changes in the structures of the neck, would ultimately manifest itself in terms of objective findings, or x-ray changes or both, which would prove the presence of tissue in-

jury. In the absence of such objective evidence a year or more after accidents it can be assumed with reasonable confidence that no injury occurred, or at most, only a minor injury from which spontaneous recovery should have taken place in a few weeks and from which there are no possibilities of residuals. In the absence of objective findings in such instances it can furthermore be asserted that symptoms which are present and attributed to the accident, are either imaginary or feigned or are due to psychoneurosis. It can logically be stated therefore that the term "whiplash" injury is in many instances a misnomer. A more fitting term would be "whiplash" accident.

Every person who develops pain in the right iliac fossa does not have appendicitis. The most inexperienced junior intern should be able to make the diagnosis of appendicitis in a deaf-mute by eliciting the objective evidence of the disease, fever, muscle spasm, absence of bowel sounds, leucocytosis etc., none of which can be voluntarily produced by the patient. The same applies to the diagnosis of injuries of the musculoskeletal system.

The relation between injury and arthritis is often one creating a considerable difference between physicians who are called upon to express opinions. Injury *per se* does not cause arthritis. In this writer's experience, the number of patients with rheumatoid arthritis who sustained severe trauma has been small. This is probably because people with rheumatoid arthritis are not generally employed in industry, and because of their disability are not as often subjected to the hazards and possibilities of injury.

As rheumatologists have pointed out,

a single trauma may be the cause of profound aggravation of rheumatoid arthritis. A large percentage of this group will show a characteristic personality pattern of emotional instability which may be accentuated by incidents of trauma. The joint immobility following even minor injury to a rheumatoid joint aggravates the arthritis and increases the joint stiffness. Prolonged immobilization and prolonged disability are characteristic of the rheumatoid arthritic following trauma even though there is no direct trauma to the involved joints.<sup>3</sup> There is no question but that repeated local insults to an arthritic joint may aggravate a rheumatoid arthritis in that joint.

It has long been recognized that degenerative or osteoarthritis is associated with age changes and with chronic traumatism. In an extensive literature it has been reiterated that in degenerative arthritis "the joint tissues undergo slowly increasing deterioration and a characteristic adaptation to changed mechanical conditions".<sup>4</sup> No definite cause for the disease (if indeed it should be called a disease any more than wrinkling of the skin and greying of the hair) has ever been established. It is believed that wear and tear on the joints over a long period produces the pathological changes in the joints. Consequently, degenerative arthritis is seen more often in the weight bearing joints, and especially in those of obese individuals who have done heavy work for many years. Many obese patients with painful weight bearing joints often obtain complete relief by reducing their weight to normal. Degenerative arthritis also develops at an earlier age in the weight bearing joints which have been functioning at a mechanical dis-

advantage, as in knock knees.

The whole question of the cause of degenerative arthritis can be reduced to one of mechanics. Any movable mechanism whether a hinge or a human joint will wear out faster than normal if it constantly functions under a mechanical handicap.

No authority has made the claim that a single trauma to a joint, even severe, has anything to do with the production of degenerative arthritis or the aggravation of pre-existing arthritis, unless the injury produces some irregularity of the joint surfaces, thus causing abnormal friction during motion, or unless it produces a mal-alignment of the joint which produces increased stress and strain, wear and tear during motion.<sup>5</sup>

It is not the purpose of this paper to discuss the specific injuries to joints which might aggravate pre-existing joint pathology, or result in the production of so called "traumatic arthritis" which is pathologically and radiographically identical with degenerative arthritis. It is the object of the paper to point out that the type of accident should be accurately visual-

ized and analyzed as to its possible effect on the structures of the body, before the assumption is made that injury to any structure actually occurred, or that an injury produced conditions favorable to the subsequent development of damage or aggravation of existing damage in the body structure.

The Memphis survey leaves little doubt that many patients with so-called "whiplash" injuries had little or no real injuries, but that a high percentage developed psychoneurotic symptoms. This is certainly true of many patients involved in accidents of all types, and often constitutes a factor which makes evaluation of organic injury and disability extremely difficult. It behooves every physician called upon to express an opinion about such individuals to analyze accurately and honestly the conditions of the alleged accident, and to arrive at an opinion in the light of well recognized scientific facts. Let it not be said that an accident resulted in a disabling organic condition, if there was no injury or if only minor injury was present or if the real cause of disability is a psychoneurosis.

### Bibliography

1. Orthopaedic Surgery, Yesterday and Tomorrow (W. T. Green) *J. Bone and Joint Surg.* 39-A, No. 3:675-685, June '57.
2. Survey of One Hundred Cases of Whiplash Injury After Settlement of Litigation (N. Gotten) *J.A.M.A.* 162:865-867, Oct. '56.
3. Aggravation of Arthritic Conditions by Trauma (J. J. Lightbody) *Harper Hospital Bulletin* 14:43-47, Jan.-Feb. '56.
4. Diagnosis in Joint Disease (N. Allison and R. Gohrmley) *Wm. Wood*, Baltimore, 1931.
5. Arthritis and Injury (D. C. Durman) *J. Mich. State Med. Soc.* 301-303, March '55.  
408 So. Jefferson Ave.



## Acute Pericarditis

NORMAN W. KELLER, M.D.  
New York, New York

The pericardium, as with other serous membranes, reacts to inflammation by the production of a fibrinous exudate, or varying types of effusion depending on the character of the noxious agent. Pericarditis may represent a primary disease or a manifestation of a systemic process. Because of its position in relation to the heart and circulation, in contrast to other serous membranes, inflammation of the pericardium requires more urgent diagnosis and treatment.

This paper will deal with the more important types of acute pericarditis.

**Classification** Acute pericarditis

may be classified etiologically into the following types:

1. Acute nonspecific
2. Tuberculous
3. Rheumatic
4. Uremic
5. Episternocardiac (Myocardial infarction)
6. Pyogenic
7. Traumatic
8. Pericarditis due to neoplasm
9. Other rare forms
  - a) Collagen diseases
  - b) Mycotic
  - c) Cholesterol
  - d) Amebic
  - e) Echinococcus

The incidence of acute pericarditis found at autopsy is about 5.8% (1). It is estimated that this is about twice the incidence found in clinical practice. The overall incidence of the various types of acute pericarditis is somewhat difficult to determine because of the geographical variation. For example, rheumatic pericarditis is much more common in the north and tuberculous in the south. In addition, most recent reports on the incidence of pericarditis cover a period extending back to the very early antibiotic era so that the reported incidence of pyogenic pericarditis does not represent what is seen today. Most workers agree that the incidence of nonspecific pericarditis has increased but whether this is a relative or real increase is difficult to evaluate. Some early and recent reports are shown in the chart on the next page.

Before discussing the more important types of pericarditis in detail, a few of the characteristics common to the various forms of pericarditis will be discussed. The specific variation in the signs and symptoms will be discussed with the particular disease.

Preble <sup>2</sup>	1901	40.4%	10 %	28.4%		11 %
Smith & Wilkins <sup>3</sup>	1932	68 %	2.7%			
Herrman & Marchand <sup>1</sup>	1952	20 %	11 %	14 %	17 %	21 %
Reeves <sup>4</sup>	1953	19.8%	7.3%	40.4%	10.4%	11.5%

**Symptoms** There are two primary subjective symptoms: pain and dyspnea. The pericardium is insensitive to pain on its visceral surface, inner surface of the parietal pericardium and outer surface above the fifth or sixth intercostal space. Below this level, pain fibers from the phrenic nerve are distributed over the outer surface of the parietal pericardium.<sup>5</sup> This accounts for the radiation of pain to the shoulder which occasionally occurs in acute inflammation of the pericardium. The intense, sharp pain aggravated by respiration which may occur in pericarditis, is most probably due to involvement of the pleura or diaphragmatic surface by the inflammatory reaction. The pain may be intermittent or continuous, severe or mild. It may be aching, constricting or mildly oppressive as is seen in large effusions. It is most severe substernally, but may radiate to neck, back, shoulder, left arm and fingers. Pain is occasionally relieved by sitting and leaning forward.

In the presence of acute pericarditis, there are several situations which will cause dyspnea. It may be due to congestive heart failure with pulmonary congestion, compression of the left lung by a large pericardial effusion, or interference with respiration by pleuritic pain. However, in the absence of any of the above situations, a tachypnea of marked degree may sometimes exist. Its origin has never been clearly defined, but has been attributed to displacement of the bronchial tree.<sup>6</sup> The dyspnea

may accompany signs of congestive heart failure from either severe myocardial involvement, or cardiac tamponade. With the latter, there may also be weakness, faintness, venous congestion, and epigastric or right upper quadrant pain from hepatic engorgement.<sup>7</sup>

**Signs** The most characteristic sign of pericarditis is the friction rub. Although it is not detected in all cases, it would probably be heard in a much higher percentage if frequent examinations are performed beginning soon after the onset of the disease. Generally, the rub is present in systole and diastole, at times causing a continuous sound, but it may be confused with a murmur when it is soft and confined to one phase of the cycle. It may be transient or last for several weeks. It may persist in the presence of an effusion but frequently disappears, becomes distant or may change position and be of greatest intensity at the base.

The remaining physical signs result from pericardial effusion. These include cardiac tamponade, Ewart's sign due to compression of the left lower lobe, and evidence of cardiac enlargement. A pericardial effusion of less than 150 cc. is probably not detectable by any means and rarely does an effusion of less than 300 cc cause any change in the cardiac silhouette. However, an effusion of this size can cause cardiac tamponade while an amount three times this will not. The deciding factor is the rate at which the effusion is formed. A large effusion forming slowly may

permit the pericardium to accommodate while a rapid production of a smaller amount of fluid into a rigid space will cause signs of cardiac compression. These include elevated venous pressure, hepatic engorgement with or without ascites, diminished systolic blood pressure, narrow pulse pressure and pulsus paradoxicus.

Pulsus Paradoxicus is an unfortunate name for an accentuation of a normal mechanism. Normally, a fall in systolic blood pressure of 4-6 mm. occurs during inspiration. A drop greater than 8-10 mm. (8 is abnormal. As a result of greater negative intra-thoracic pressure and increased positive intra-abdominal pressure during normal inspiration, there is an increased return of blood to the right heart. The resulting increased right ventricular stroke volume almost completely compensates for the increased capacity of the pulmonary vascular bed which occurs during inspiration. As a result, the stroke volume of the left ventricle is only slightly diminished which accounts for the small drop in systolic blood pressure during this phase of the respiratory cycle. However, in the presence of an effusion with cardiac compression, the return to the right ventricle is diminished, resulting in an uncompensated increase of the pulmonary vascular bed and diminished return to the left ventricle. In addition the compression of the left auricle causes increased resistance to the return of blood from the lungs. Both of these mechanisms accentuate the decrease in left ventricular stroke volume during inspiration producing pulsus paradoxicus.

Clinical evidence of cardiac enlargement due to effusion such as increased area of dullness, absent apical impulse

and muffled heart sounds are preceded by x-ray changes. A sudden increase of the cardiothoracic ratio and straightening of the left border are the most consistent and earliest signs of developing effusion. Change of contour, bulging of the right border, widening of the vascular pedicle, and haziness of the posterior border in the oblique view are less consistent and usually later signs.<sup>9</sup> Widening of the base of the heart in the Trendelenburg position may occur in large effusions but this sign may also occur in the presence of a large flabby dilated heart.<sup>8</sup> Obliteration of the right cardio-diaphragmatic angle is an inconstant sign.

At times it may be almost impossible to distinguish clinically between pericardial effusion and cardiac dilation. Marked diminution of the left ventricular pulsations in the presence of normal pulsations of the aortic knob, absence of muffled heart sounds, and the presence of an apical impulse would suggest cardiac dilatation. The inability to aspirate fluid is not an absolute criteria because the effusion may be posterior or loculated and not accessible by the usual approach. If it is essential to differentiate between the two conditions, angiocardiography or cardiac catheterization with a radio-opaque catheter<sup>9</sup> may be of invaluable aid. This problem will be further discussed with acute non-specific pericarditis.

#### *Electrocardiographic changes:*

Electrocardiographic evidence of pericarditis may present in two forms:

1. S-T and T wave abnormalities; and,
2. Low voltage due to large effusion.

In the early part of the acute stage, the characteristic finding is S-T elevation, most prominent in one or all of

the standard leads. The S-T segment has been described as being concave upward in contrast to the upward convexity seen after myocardial infarction.<sup>10</sup> The T wave abnormalities may be seen in all of the standard leads and most of the precordial leads<sup>9</sup> and last for a variable length of time.

The S-T and T wave abnormalities are attributed to subepicardial myocarditis. Several authors<sup>11,12</sup> have demonstrated, histologically, the presence of superficial myocardial involvement in various types of acute pericarditis presenting ECG changes and the absence of myocardial involvement where the ECG was normal. Likewise, pericarditis produced in dogs has demonstrated this relationship between the occurrence of superficial myocarditis and electrocardiographic abnormalities.

#### **ACUTE NON-SPECIFIC PERICARDITIS**

Acute non-specific pericarditis of unknown etiology has been gaining more and more attention within recent years. Because this relatively benign disease may be confused with other conditions having a more serious prognosis or conflicting methods of therapy, it is essential that accurate differentiation be made.

Christian<sup>14</sup> makes mention of reports dated back to 1854 and quotes a description of this disease from Osler's "Principles and Practice of Medicine", published in 1895. In 1934 Willins<sup>15</sup> reported a case of pericarditis following an episode of acute pharyngitis, but, investigation of this disease did not gain impetus until after the paper of Barnes and Burchell in 1942<sup>16</sup> in which they reported 14 cases and stressed the importance of differentiating this

disease from acute myocardial infarction. This type of pericarditis has also been termed idiopathic, serofibrinous, epidemic, primary, non-rheumatic, benign, relapsing and cryptic.

Although non-specific pericarditis is not a common disease, there has been an apparent increased incidence within the last 10 to 15 years. Feder<sup>17</sup> states that "the frequency with which we have encountered acute primary pericarditis since we have been on the look for it, indicates that it is not rare". In some series, it has occurred with equal or greater frequency than rheumatic pericarditis.<sup>18</sup> In a review of 292 cases of acute pericarditis from Presbyterian Hospital, Levy and Patterson<sup>16</sup> found 7.5% to be in this category.

#### **Clinical Features**

**Age** There has been a feeling that this disease is found only in the younger age groups and thus differentiates it from myocardial infarction. Although the average age in the larger series is about 35 years, age cannot be used as a diagnostic point. Carmichael,<sup>17</sup> in a report of 50 cases, found 21 to be in the 11-30 age group and 19 to be in the 31-50 age group. Others have reported the disease in patients in the sixth decade and in very young children.<sup>18,19</sup> Approximately 75% of most series are male.

The disease has been reported in Negroes and, in them, has been confused with tuberculous pericarditis.

**Symptoms** An infection of the respiratory tract occurs in 60 to 85%<sup>16,17</sup> prior to the onset of acute pericarditis, with a 10-14 day interval being the most common. It is most frequently described as a "Cold" but viral pneumonia, notably the primary atypical

type and a "grippe" syndrome, have also been reported.<sup>16, 20, 21</sup>

The onset of the disease is most often acute with the sudden appearance of chest pain. Less frequently, the pain as it first appears is mild, gradually increasing over a period of hours to days. The complete absence of pain is rare but has been reported.<sup>16</sup> The pain is usually severe, requiring the use of narcotics, but extremely intense pain lasts but a few hours, and has been described as sharp squeezing, constricting and crushing. It is substernal or precordial and radiation to neck, back, left shoulder, arm, and even to 4th and 5th fingers is not uncommon. In rare instances, the pain has been primarily abdominal and simulated a surgical emergency.<sup>16</sup> It is described as being aggravated by respiration, movement of the trunk, cough and swallowing. At times, relief is achieved by sitting and leaning forward but this is not true in the majority of cases. The pain may last from a few minutes to several weeks with an extreme of 10 weeks<sup>16</sup> and an average of 7-10 days. It is usually intermittent.

Dyspnea is the next most common symptom. This is usually attributed to the rapid shallow respiration secondary to splinting of the thoracic cage. Very rarely is there true orthopnea or evidence of pulmonary congestion. Malaise is generally present. Nausea and vomiting are relatively infrequent.

**Signs** Fever occurs in all cases<sup>22</sup> and may range to 104-105°. It may last from a few days to one month but most cases are afebrile by the end of the second week. An important diagnostic point is the presence of a fever on the first day of illness. At the onset of pain, the great majority of patients

have a fever, in contrast to the 36-48 hour interval following a myocardial infarction. The sedimentation rate is elevated in almost all cases and usually from the day of onset of the disease. White blood count may be normal but, in the majority of cases, it is elevated.

One of the most characteristic physical findings is a pericardial friction rub which is usually of greater intensity than that which occurs after a myocardial infarction. It is reported to occur in 70-80% of the cases and would probably be encountered more frequently if all patients were examined from the very onset of chest pain.<sup>16, 20</sup> The rub may be transitory, but has been reported lasting 60 days (Carmichael), with an average duration of about 9 days.

Tachycardia is present in most cases. Parker<sup>23</sup> found it present in 100% of his series. A gallop rhythm has been reported infrequently.<sup>16, 20</sup> Morris<sup>24</sup> and Franklin report the occurrence of a ventricular tachycardia in a 21-year-old male with no history of previous heart disease. A moderate fall in systolic blood pressure may occur.<sup>16</sup> At times, a shock-like state may accompany the onset of pain but true shock rarely, if ever, occurs.

Pleural effusion occurs rather frequently, being on the left side or bilaterally but rarely isolated on the right. Carmichael<sup>27</sup> found it present in 28% of cases and this is in agreement with most series. The etiology of this is obscure although there may be an associated viral bronchopneumonia or primary atypical pneumonia. The pleural effusion occurs in the absence of other signs of pulmonary congestion. Frank congestive heart failure rarely, if ever, occurs in the adult but Fried-

man<sup>19</sup> reported mild congestive failure in three children during the course of non specific pericarditis.

Clinical and roentgenologic evidence of cardiac enlargement is common. It is found in 50-80% of reported cases.<sup>17, 25, 10</sup> Davies, in an evaluation of 99 cases from several reports, found it present in 63% and Levy<sup>10</sup> reports it occurring in 80% of patients who had adequate x-ray studies. The cause of this enlargement has been the subject of much controversy. Signs of cardiac compression attributed to effusion have been reported,<sup>26, 27, 22</sup> and up to 350 cc. of serous, or more commonly, sero-sanguinous fluid, has been aspirated. Bower<sup>10</sup> reports a case of cardiac tamponade in a child relieved by the aspiration of 250 cc. but, in other instances of enlargement, pericardiocenteses has been unsuccessful.<sup>28</sup> However, most authors are of the opinion that cardiac dilation is responsible for the enlargement in the greater majority of patients, but recognize the fact that in some instances, effusion may be partially or solely the cause of it.<sup>10</sup> As a basis for this belief, the following is cited: 1. Rapid cardiac enlargement occurs over a period of 3-4 days without signs of circulatory changes. Effusion developing in this brief period would almost certainly produce some signs of compression. 2. In the presence of marked cardiac enlargement, repeated attempts to aspirate fluid have been unsuccessful. 3. In the presence of marked enlargement, there is a lack of suppression of cardiac sounds, absence of signs of cardiac compression and persistence of normal voltage on the electrocardiogram.

The electrocardiogram is a valuable aid in the diagnosis of this form of

acute pericarditis for ECG changes are almost invariably present if not diagnostic.<sup>18, 16, 15</sup> In the early stage S-T segment elevation may occur in all three standard leads but, more often it leads I and II or II and III. S-T segment depression has not been reported. After a period of 12 hours to several days the T waves become isoelectric and then inverted. This may also be present in the chest leads. The S-T segment returns to normal before the T waves become inverted.<sup>20</sup> T wave abnormalities have persisted for as long as two years after the acute episode. This persistence of T wave abnormalities has been cited as evidence of significant myocardial damage.<sup>20</sup>

**Course and Prognosis** The clinical course may vary from a mild episode characterized by pain, friction rub and fever to a prolonged illness with marked cardiac dilatation, respiratory distress and toxicity. The duration of illness in Levy's<sup>10</sup> series ranged from two weeks to three months with an average of seven and one-half weeks.

The prognosis is almost invariably good. There has been only one reported fatality,<sup>29</sup> and this was a patient treated as a myocardial infarction with heparin and Dicoumoral<sup>®</sup>, and death was due to a hemopericardium.

A peculiar characteristic of this disease is its tendency to recur with an incidence of about 14%.<sup>17</sup> Tomlin<sup>30</sup> reported one case said to have had 19 recurrences in 21 years. Recurrences are milder than the first attack and are usually accompanied by some pain and low grade fever as well as an elevated sedimentation rate. The recurring nature of this disease has been compared to that of the postcommisurotomy syndrome.

Recently, there have been reports relating this disease to adhesive or constrictive pericarditis. Freilich<sup>22</sup> followed one patient who, after his 4th episode, demonstrated electrokymographic and fluoroscopic changes of adhesive pericarditis. Two of the 21 patients followed by Krook<sup>23</sup> developed a picture of chronic constrictive pericarditis and came to surgery. He summarizes with the statement "that some instances of chronic constrictive pericarditis, for which no clear cause can be demonstrated, may have a background of unrecognized acute non-specific pericarditis."

**Etiology** The etiology of non-specific pericarditis is unknown. As with so many other diseases in this category, many causative agents have been suggested. The etiological agents of Borsoloms disease<sup>19</sup> and primary atypical pneumonia<sup>20</sup> have been suggested as possible causes because of the occasional association of benign pericarditis with these diseases. In Friedman's<sup>18</sup> series, agglutinins for a variety of viruses and Rickettsial diseases were not found. As pointed out by Carmichael,<sup>17</sup> the proponents of the concept of viral etiology find support in the occasional epidemics of pericarditis, the relationship to viral upper respiratory infections, the absence of bacteria in the pericardial fluid, and the benign course of the disease. Some are of the opinion that the leukocytosis frequently present does not support the viral concept.

Nathan<sup>27</sup> suggests a "hypersensitivity response by the pericardium to the offending organism in which the immune reaction of the body is inadequate," similar to that seen in rheumatic disease. In this regard, there have been occasional reports of positive anti-

streptolysin O titers.<sup>24,25</sup> Dressler<sup>21</sup> in an extensive report stresses the many similarities between idiopathic pericarditis and the post-commissurotomy syndrome and suggests a common etiology i.e. rheumatic. As support of this theory he cites: 1. the presence of major or minor rheumatic manifestation in a relatively large number of cases of idiopathic pericarditis reported in the literature and of two-thirds of the cases in his own series; 2. salicylates and pyramidal sometimes have a beneficial, even dramatic effect in cases of idiopathic pericarditis; 3. idiopathic pericarditis is predominantly a disease of the adult and rheumatic fever in the adult is known to manifest itself often atypically, as a benign exudative process which may heal without residual heart disease.

In a series of autopsy reports on patients with rheumatoid arthritis, Sokoloff<sup>26</sup> states that "it appears that patients with rheumatoid arthritis had evidence of healed idiopathic pericarditis 17 times as commonly as other types of individuals had."

The typical picture of this disease has been reported by several observers<sup>24</sup> as part of a serum sickness reaction and an allergic etiology has been suggested. The infrequency of associated allergic manifestations makes this quite unlikely.

Idiopathic pericarditis has been likened to primary pleural effusion and its frequent association with tuberculosis. However, many long term follow ups have not established any tuberculous complications which would be expected if this were a tuberculous pericarditis.

**Pathology** Due to the relatively benign course of this disease, pathologic reports have been rare. In the one fa-

tality reported,<sup>20</sup> the autopsy revealed a myocarditis and a hemorrhagic pericarditis. The degree of myocardial involvement is not further described. A pericardial biopsy reported by Goyette<sup>21</sup> showed non-specific inflammatory changes. The thickened pericardium showed hemorrhagic areas with leukocyte and small inflammatory cell infiltration in the deeper layers.

**Therapy** The therapy of acute non-specific pericarditis has been primarily symptomatic. However, when aureomycin was first introduced, there were reports of prompt response to it in some cases (Tenhenhous,<sup>22</sup> Braun<sup>23</sup>). Streptomycin also had favorable reports.<sup>22</sup> However, neither have proven to be generally effective and a more recent report<sup>20</sup> indicates that none of the antibiotics have been effective in shortening the course of this disease.

A recent report<sup>18</sup> on the use of steroids suggests that they may be used to advantage in some instances. Four cases treated with ACTH or cortisone showed prompt symptomatic improvement. Following the withdrawal of cortisone, relapses occurred which responded to ACTH. Cardiac improvement was less striking. The friction rub persisted in two cases and the return of cardiac size to normal was no more rapid than in the untreated group. The author states that it did not shorten the length of the disease.

In view of the relatively benign nature of this disease perhaps the most important therapeutic consideration is to avoid the use of anticoagulants. To do this, the diagnosis of acute non-specific pericarditis must be considered each time we are confronted with signs and symptoms suggestive of an atypical myocardial infarction.

## TUBERCULOUS PERICARDITIS

Tuberculous pericarditis, although not a common disease, is occasionally the most important clinical manifestation of tuberculosis.

In 1872, the first patient was reported by Quinquand and Lejard.<sup>14</sup> Osler in 1893, presented the clinical findings of the disease based on a series of 17 patients. Riesman<sup>39</sup> in 1901 was the first to present the concept of "primary tuberculous pericarditis."

"Primary tuberculous pericarditis" has been the subject of much discussion. Rokitansky<sup>30</sup> believed that tuberculous pericarditis is dependent on an earlier tuberculous lesion. Most workers have agreed with this concept but there have been a few<sup>41</sup> who believed that it may occur without the presence of any earlier tuberculous lesion. Clinically, primary tuberculous pericarditis refers to cases in which active tuberculous lesions cannot be found elsewhere in the body at the onset of symptoms. Anatomically, primary tuberculous pericarditis refers to cases in which no other lesion can be found at autopsy but, as Harvey and Whitehill<sup>42</sup> state, "this form must never occur."

Tuberculous infection of the pericardium occurs through the blood stream as a consequence of miliary tuberculosis, by direct extension from neighboring organs such as lungs, pleura or, more commonly, mediastinal and peribronchial nodes and by lymphatic spread from a mediastinal focus. When the infection is blood-born, there usually results only an acute dry miliary involvement of the epicardium which is only one manifestation of a systemic process in which many of the serous membranes are involved and the peri-

carditis, insignificant as a cause of death, may be overlooked. Involvement of the pericardium by direct extension is not too common<sup>11</sup> but there is no doubt that it does occur<sup>7</sup> with a rapidly progressive course. Probably the most frequent route of infection is along the lymph channels from a focus in a mediastinal node with or without active pulmonary disease. This group accounts for most cases of the clinically primary type.

**Incidence** The incidence of tuberculous pericarditis is not high. Norris reported 1,780 tuberculous patients in which pericarditis was present in 82 or 1.1%. It accounts for 7 to 10% of all cases of acute pericarditis.<sup>3,4</sup> Keefer<sup>43</sup> states there is a slightly higher incidence in the age group over 40 but it occurs at all ages. The male to female ratio is about 2:1, and it is much more common in Negroes.

**Signs and Symptoms** Clinically, tuberculous pericarditis may present in several ways. It may be an asymptomatic lesion accompanying tuberculosis elsewhere in the body or, more commonly, it presents as the main clinical manifestation of tuberculosis either accompanying other lesions or as the primary clinical type. The latter group has a much more serious prognosis.<sup>44</sup>

The progression of symptoms in pericarditis with effusion is characteristically slow.<sup>45</sup> Non-specific complaints of anorexia, malaise, weakness and fever precede, by a short time, the onset of a non-productive cough which is a prominent early symptom. About 35% have chest pain<sup>45</sup> which usually is a dull, vaguely localized type. Rarely is the pain severe enough to be the presenting complaint. After a period of several weeks, mild exertional dyspnea occurs

and is slowly progressive in nature such that it is the presenting symptom in the majority of patients. It is present in 85% of cases (Harvey<sup>43</sup>). Peripheral edema is another frequent complaint but usually occurs after the onset of dyspnea. Harvey and Whitehill,<sup>42</sup> in an analysis of 20 proven instances of pericarditis with effusion, found the average duration of minor symptoms when first seen to be 7 weeks of dyspnea to be 4 weeks.

The physical signs will depend on the degree of pericardial effusion. Occasionally, there is frank cardiac tamponade when first seen but more commonly there is a mild degree of neck vein distention, hepatomegaly and edema. There might be a pleural effusion, cardiac enlargement, weak heart sounds, absent impulse and signs of left lower lobe compression. Although a friction rub can be found in the presence of an effusion, it is detected in only about 20% of these patients before tap. Even in the presence of the above signs, the blood pressure and pulse pressure are usually within the normal range although a paradoxical pulse can often be detected. There is a persistent tachycardia and fever.

The most important laboratory aid in establishing a diagnosis is, of course, a positive culture for tubercle bacilli from the pericardial fluid. This is frequently very difficult to do and may require frequent taps and cultures. A significant percentage of cases fail to give positive cultures and the patients fall into the group of "unproven" tuberculous pericarditis. Chest x-ray will show evidence of the pericardial effusion which is often massive. Harvey and Whitehill<sup>42</sup> report a patient in which 3500 cc. was removed at one

tap. The average case has a larger effusion than is seen in most other types of pericarditis. The pericardial fluid may be gelatinous but is usually sero-sanguinous with a high specific gravity and elevated white count.<sup>8</sup> Tuberculin tests have been reported negative in proven cases.<sup>46</sup> There is occasionally a mild anemia and leukocytosis. The electrocardiogram frequently shows diminished voltage and the inverted T waves suggestive of chronic pericarditis.

**Course and Prognosis** Prior to the use of anti-bacterial therapy in the treatment of tuberculous pericarditis, the case fatality rate was 80 to 85%, being more in Negroes and the older age groups.<sup>42, 45</sup>

In a series reported by Harvey and Whitehill,<sup>42</sup> the average duration from onset of symptoms until death was 3.7 months. In five cases over 50 years of age it was 9 weeks and in 8 cases under 50 it was 18 weeks. In most series, the majority of deaths occur within 6 months. However, Stepman<sup>45</sup> reports one patient with a large effusion which persisted for two years before death was caused by miliary tuberculosis.

In the development of typical tuberculous pericarditis, three stages have been described.<sup>40</sup> 1) An acute fibrinous stage; 2) the stage of pericardial thickening and effusion; and, 3) the stage of adhesive pericarditis.

The first stage corresponds clinically with the onset and early symptoms described above, that is, signs of an infectious disease perhaps with some chest pain and pericardial friction rub.

The second stage of thickening and effusion is most commonly encountered when the patient is first seen and it is the progression of this stage that leads

to death in the majority of cases. The pericardial effusion gradually increases, producing all degrees of cardiac compression. Frequent pericardiocenteses may be necessary to produce temporary relief. The later course is dominated by one of two features: 1) myocardial failure with progressive dyspnea, hepatomegaly, ascites and edema which occurs in 60 to 80% of cases<sup>42, 47</sup> or 2) a disseminated tuberculosis which occurs in 65% of cases.<sup>42</sup> The poorer prognosis in the older age group apparently is related to the state of their myocardium which, due to arteriosclerotic changes, is less able to withstand the extra burden. Cardiac arrhythmias occur in about 30%.<sup>45, 47</sup> Auricular fibrillation is most common but frequent PVC's and auricular flutter have been reported.<sup>44</sup> In general, the older group die in congestive heart failure while the younger group die from disseminated tuberculosis. The spread of the disease usually becomes obvious within a few weeks or months after the onset of symptoms but may not occur until one or several years later as in the case reported by Stepman.

If the patient lives, the third stage, that of adhesive pericarditis, occurs. While the patient is improving, the effusion gradually diminishes, becomes thick and organization takes place. The adherent pericardium need not appreciably effect the cardiac function, however, various manifestations of constriction may occur. Fibrous bands may occasionally produce edema by constriction of the vena cava; constriction of the left auriculo-ventricular groove may produce an obstruction resembling mitral stenosis.<sup>46, 48</sup> Fibrosis may progress to produce the classical signs of

chronic constrictive pericarditis or Pick's disease and requiring pericardial resection.

**Pathology** On post mortem examination, the pericardium contains varying amounts of blood-tinged or grossly hemorrhagic fluid. The pericardial sac is large and dilated. The parietal surface is thick and leathery, with nodular tubercles. There may be fibrous adhesions to the surrounding structures. The visceral surface has a thick, shaggy, necrotic coating, the outer layer of which is fibrin. Below this, a thick layer of granulation tissue overlies the epicardium. Cases which have gone on to the adhesive stage show greater thickening of the pericardium which has a rubbery consistency. There is a variable amount of loculation and adhesions between the two surfaces.

Microscopically, the inflammatory process can be seen extending into the superficial myocardium with tuberculous material at times dipping into the deeper layers.<sup>42</sup> The heart itself is otherwise normal and not enlarged.

**Treatment** In addition to the general supportive measures for the treatment of tuberculosis, there are more specific indications in pericarditis. As mentioned above, pericardiocentesis is frequently necessary and must be repeated to relieve cardiac tamponade. Replacing half the quantity of fluid with air has been advocated by some because of the possibility that it will limit the tuberculous exudate to the cavity and thereby prevent a later adhesive pericarditis. However, the efficacy of this form of treatment is doubted.<sup>43</sup> Digitalis has not been effective in controlling the manifestations of congestive heart failure except in the management of arrhythmias.

With the advent of chemo-therapy in the treatment of tuberculosis, there has been much speculation on its effect in pericarditis. The number of patients treated has been small but the results are encouraging. Myers<sup>44</sup> reported three patients treated and all living and well after a follow-up period of 28 months. Shapiro<sup>45</sup> reported a mortality of only 43% in a series of 14 treated cases. The present treatment of choice consists of 1 Gm. of Streptomycin daily until toxemia subsides and a dose of 1 Gm. twice weekly. This is combined with PAS 12 Gm. daily and/or Isoniazid 150 to 350 mg. daily. The duration of treatment depends on many factors but should, in general, be continued for several months after the lesion has stabilized.<sup>46</sup>

## RHEUMATIC PERICARDITIS

The occurrence of acute pericarditis accompanying an episode of rheumatic fever has been variously estimated at 6 to 25%.<sup>52</sup> This great variation in incidence is most likely due to the facts that the diagnosis may easily be missed if the friction rub is not heard, and that the series which include autopsy material will have a much higher incidence than those based on clinical findings alone. Pathologic evidence of a pericarditis is present in almost every case of acute rheumatic fever.<sup>51</sup> Myocardial involvement is always present<sup>52</sup> and signs of congestive heart failure are usually due to this rather than cardiac tamponade. The pericardial effusion rarely exceeds 300 cc. and aspiration to relieve compression is required infrequently. Thomas<sup>52</sup> stresses the difference between pericarditis with effusion and the so-called "dry" pericarditis. He

states that the effusion may occur at any time during the course of the disease and effects the prognosis adversely, while the "dry" type usually occurs within the first month of rheumatic activity and runs a relatively benign course.

In addition to fever and tachycardia, the majority of patients have chest pain described as a substernal ache aggravated by movements of the chest and may radiate to the shoulder; rarely is the pain severe. Commonly there is a marked tachypnea, the etiology of which is not clear. It cannot be attributed to the size of the effusion since aspiration does not uniformly relieve it. There may be evidence of elevated venous pressure. A "to and fro" friction rub may be present for a short time. These signs usually occur before there is x-ray evidence of pericardial effusion. Pleural effusion is commonly associated with pericarditis. This is usually found on the left side or bilaterally; rarely on the right side alone.

Electrocardiographic abnormalities consistent with acute pericarditis were present in all the cases reported by Nay,<sup>54</sup> regardless of the presence or absence of an effusion. Thomas,<sup>52</sup> however, found ECG abnormalities in about 60% of his cases with effusion and in none of the cases of "dry" pericarditis. In addition to S-T and T wave changes, conduction defects due to the pancarditis are frequently present. Prolongation of the P-R interval is reported to occur in about 20% during the acute episode.<sup>53</sup>

In a review of 135 case records of rheumatic pericarditis, Massie and Levine found that 128 had either accompanying manifestations of acute rheumatic fever or a definite history of one

or more episodes of rheumatic fever in the past. The remaining seven cases had either a positive family history of rheumatic fever or frequent attacks of tonsillitis.

The prognosis of the acute episode depends more on the degree of myocardial and endocardial involvement rather than the pericarditis *per se*. Thomas<sup>52</sup> reports a 50% mortality in pericarditis with effusion compared to no deaths in the "dry" pericarditis. He suggests that this is due to the longer duration of preceding rheumatic activity in the former group.

The occurrence of pericarditis in the course of acute rheumatic fever does not imply any greater involvement of myocardium or endocardium and thus does not effect the long term prognosis. In a long term follow-up of patients who had rheumatic pericarditis, Massie and Levine<sup>53</sup> found a large percentage who subsequently showed only minimal cardiac involvement. They conclude that even after a severe bout of rheumatic pericarditis, recovery can frequently be so complete that years later there may be no signs or symptoms of heart disease. There is general agreement in the field that chronic constrictive pericarditis does not follow healed rheumatic pericarditis.

The treatment of rheumatic pericarditis is that of rheumatic fever in general, and except for mention of the rare need for pericardiocentesis, requires no further comment.

### **PYOGENIC PERICARDITIS**

The wide use of antibiotics has so curtailed extensive pyogenic disease that purulent pericarditis is fast becoming a medical curiosity. However, it still

occurs occasionally and remains important because of its high fatality rate when unrecognized.

Pyogenic invasion of the pericardium causes a suppurative reaction frequently with thick purulent exudate. The most common etiologic agents are pneumococcus, streptococcus, and staphylococcus.<sup>55</sup> Less frequently, *H. Influenza*, Friedlanders, *Bacillus*, *B. Tularensis*, and *H. Pertussis*, have been the causative organisms.<sup>56</sup> It occurs secondary to a variety of disease processes elsewhere in the body. This includes pneumonia with and without empyema, osteomyelitis, infection of the upper respiratory tract, rupture of subphrenic abscesses through the diaphragm such as may occur following rupture of the gall bladder, endocarditis, and other forms of septicemia. Puncture wounds of the pericardium are frequently followed by a pyogenic pericarditis.

This complication must always be suspected when the primary infection is not responding to therapy as one would expect or when the clinical signs cannot be fully explained by the primary infection. Cyanosis, dyspnea, neck vein distention, and hepatomegaly may be early signs if the effusion develops rapidly so as to cause cardiac compression but as frequently happens in a severe pneumonia, these early clues to pericarditis are overlooked. A transient friction rub may be heard. Clinical evidence of cardiac enlargement can be detected, but frequently not in its earliest stage, unless earlier x-rays are available for comparison. The proof of the diagnosis depends upon the aspiration of the purulent fluid from the pericardium. Shipley<sup>57</sup> has stressed that this may be dangerous and difficult since the purulent exudate commonly locates in the

posterior pericardium and pushes the heart forward against the anterior thoracic wall.

It is of the utmost importance that the diagnosis be made and treatment instituted as early in the disease as possible. Before the use of antibiotics, the mortality was about 50%<sup>57</sup> even in patients treated with early pericardiotomy. Hunter<sup>58</sup> states that systemic antibiotics alone alone cannot be counted on to handle purulent pericarditis but the local instillation of appropriate antibiotics is also necessary.

In addition to chemotherapy, a pyogenic pericarditis must be treated as any other abscess with drainage. Pericardiotomy with open drainage appears to be the treatment of choice.<sup>53,58</sup> However, some workers<sup>56</sup> prefer repeated paracenteses as a means of drainage. If signs of uncontrolled infection or persistent cardiac compression occurs, pericardiotomy is then performed. Recently, streptokinase and streptodornase have been used without serious untoward effects.<sup>58</sup>

## DIFFERENTIAL DIAGNOSIS

The problem of differential diagnosis in acute pericarditis arises primarily between non-specific pericarditis on the one hand and acute myocardial infarction, rheumatic pericarditis and possibly tuberculous pericarditis on the other. The most common diagnostic error is that of mistaking non-specific pericarditis for acute myocardial infarction. Prognostically and therapeutically, this is a most important differential. The sudden onset of severe pressing anterior chest pain with radiation to neck, shoulder and arm, etc., is classical of both diseases. The increase

in intensity of pain by respiration cough and thoracic movement, while common in the former, is rarely seen at the onset of pain in myocardial infarction. Fever, leukocytosis and increased sedimentation rate are very frequently present at the very onset of pain in non-specific pericarditis but are not present for 2-3 days after coronary thrombosis. The fever may be much higher in pericarditis than one would expect after myocardial infarction. When present, pneumonitis and pleuritic involvement with or without effusion, would strongly suggest the diagnosis of pericarditis. Although S-T elevation and T-wave abnormalities are frequently present in both diseases, reciprocal S-T depression and QRS changes characteristic of infarction, are never caused by non-specific pericarditis.

The differential diagnosis between non-specific and rheumatic pericarditis ordinarily presents no great difficulty. However, rheumatic pericarditis may at times occur in the absence of other major or minor manifestations of rheumatic heart disease and in this situation it may be extremely difficult, if not impossible, to arrive at the correct diagnosis until the course of the disease has been observed. As mentioned earlier, there are many similarities between the

two diseases, but there are a few helpful differential points. The pain in rheumatic pericarditis is usually not as severe as that in non-specific pericarditis. The presence of congestive heart failure would lead one toward rheumatic disease for it rarely occurs in non-specific pericarditis. Conduction defects in the electrocardiogram would also strongly support the diagnosis of rheumatic pericarditis. A positive A.S.O. titer may be helpful but it must be remembered that this test can be positive in non-specific pericarditis. As pointed out by some observers<sup>16,25</sup> a lack of response to salicylates would be more in favor of non-specific pericarditis. A detailed history to elicit any possible manifestation of rheumatic fever will be the most fruitful diagnostic tool.

Although tuberculous pericarditis may at times be difficult to prove, it is usually not confused with the other common types of pericarditis. The insidious onset, absent or minimal pain and infrequency of complaints referable to the chest, serve to distinguish this disease from the others. In the occasional case of tuberculous pericarditis with an acute onset accompanied by chest pain, the prolonged and progressively downhill course will indicate the proper diagnosis.

### Bibliography

1. Herman, G. R., and Marchard, E. J.: Pericarditis. *Am. Heart J.* 43:641, 1952.
2. Preble, R. B.: Etiology of pericarditis. *J.A.M.A.* 37:1510, 1901.
3. Smith, J. and Willins, F. A.: *Arch. of Int. Med.* 50:184, 1932.
4. Reeves, R. L.: The cause of acute pericarditis. *Am. J. of Med. Science.* 225:34, 1953.
5. Capps, J. A.: Pain from pleura and pericardium. *J. Res. Nerv. and Ment. Dise. Proc.* 23:263, 1943.
6. Friedberg, C. K.: *Diseases of the Heart.* Philadelphia, W. B. Saunders, 1949.
7. White, P. D.: *Heart Disease.* New York, The MacMillan Co., 1945.
8. McGuire, J., Kotte, J. H. and Helm, R. A.: Acute pericarditis. *Circulation.* 9:425, 1954.
9. Besterman, E. M. M. and Thomas, G. T.: Radiological diagnosis of rheumatic pericardial effusion. *Brit. Heart J.* 15:113, 1953.
10. Barnes, A. R. and Burchell, H. B.: Acute pericarditis simulating acute coronary occlusion. *Am. Heart J.* 23:247, 1942.
11. Bellet, S. and McMillen, T. M.: Electrocardiographic patterns in acute pericarditis. *Arch. Int. Med.* 61:381, 1938.

12. Vander Veer, J. B. and Norris, R. F.: The electrocardiographic changes in acute pericarditis. *Am. Heart J.* 14:31, 1937.

13. Logue, R. B. and Wendkos, M. H.: Acute pericarditis of benign type. *Am. Heart J.* 36: 587, 1948.

14. Christian, H. A.: Nearly ten decades of interest in idiopathic pericarditis. *Am. Heart J.* 42:645, 1951.

15. Feder, I. A., Hoffman, J. and Sugar, H.: Acute primary pericarditis. *Am. J. Med. Sc.* 220:144, 1950.

16. Levy, R. L. and Patterson, M. C.: Acute serofibrinous pericarditis of undetermined etiology. *Am. J. Med.* 8:34, 1950.

17. Carmichael, D. B., Sprague, H. B. et al: Acute non specific pericarditis. *Circulation* 3: 321, 1951.

18. Friedman, S.: Acute benign pericarditis in childhood. Comparison with rheumatic pericarditis. *Pediatrics* 9:551, 1952.

19. Bower, B. D., Gerrard, J. and MacGregor, M. E. Acute benign pericarditis. *Brit. Med. J.* 1:244, 1953.

20. Finkelstein, D. and Klainer, M. S.: Pericarditis associated with primary atypical pneumonia. *Am. Heart J.* 28:385, 1944.

21. Wolff, L.: Acute pericarditis simulating myocardial infarction. *New England J. Med.* 14:422, 1944.

22. Porter, W. B., Clark, O. and Porter, R. R.: Nonspecific benign pericarditis. *J.A.M.A.* 144: 749, 1950.

23. Parker, R. C. Jr., and Cooper, H. R.: Acute idiopathic pericarditis. *J.A.M.A.* 147: 835, 1951.

24. Morris, G. M. and Franklin, P. B.: Ventricular tachycardia due to idiopathic pericarditis. *Am. Heart J.* 47:919, 1954.

25. Davies, D. H.: Acute benign pericarditis of unknown origin. *Brit. Heart J.* 14:309, 1952.

26. Godfrey, J.: Myocardial involvement in acute non-specific pericarditis. *Arch. Int. Med.* 35:1336, 1951.

27. Nathan, D. A. and Datho, R. A.: Pericarditis with effusion following infection of the upper respiratory tract. *Am. Heart J.* 31:115, 1946.

28. Nay, R. M. and Boyer, N. H.: Acute pericarditis in young adults. *Am. Heart J.* 32: 222, 1946.

29. McCord, M. C., Taguchi, J. T. and Black, M. Non-specific pericarditis. *Am. J. Med.* 10: 516, 1951.

30. Tomlin, C. E., Logue, R. B. and Hurst, J. W.: Recurrent nature of acute benign pericarditis. *J.A.M.A.* 149:1215, 1952.

31. Dressler, W.: Idiopathic recurrent pericarditis. *Am. J. Med.* 18:591, 1955.

32. Freilich, J. K.: Acute nonspecific pericarditis complicated by the development of a fibrous pericardium. *Ann. of Int. Med.* 37:388, 1952.

33. Krook, H.: Acute nonspecific pericarditis with later development into constrictive pericarditis. *Acta Med. Scandinav.* 148:201, 1954. (Abstract).

34. McKinley, C. A.: Allergic carditis, pericarditis, and pleurisy. *The J. Lancet* 68:61, 1948.

35. Sokoloff, L.: The heart in rheumatoid arthritis. *Am. Heart J.* 45:635, 1953.

36. Goyette, E. M.: Acute idiopathic pericarditis. *Ann. Int. Med.* 39:1032, 1953.

37. Tanheusen, M. and Beans, W. A.: Treatment of acute nonspecific pericarditis with aureomycin. *J.A.M.A.* 142:973, 1950.

38. Brown, M. G.: Acute benign pericarditis. *New Eng. J. Med.* 244:666, 1951.

39. Riesman, D.: Primary tuberculosis of the pericardium. *Am. J. Med. Sc.* 122:6, 1901.

40. Willins, F. A.: Clinic on acute sero-fibrinous pericarditis secondary to acute pharyngitis. *Proc. Staff. Meet. Mayo Cl.* 9:637, 1934.

42. Harvey, A. M. and Whitehill, M. R.: Tuberculosis pericarditis. *Medicine* 16:45, 1937.

43. Keefer, C. S.: Tuberculosis of the pericardium. *Ann. Int. Med.* 10:1085, 1937.

44. Wood, J. A.: Tuberculosis pericarditis. *Am. Heart J.* 42:737, 1951.

45. Stepmann, T. R. and Owyang, E.: Clinically primary tuberculosis of the pericardium. *Ann. Int. Med.* 27:914, 1947.

46. Bellet, S.: Tuberculosis pericarditis; A clinical and pathological study. *Med. Cl. No. Amer.* 18:201, 1934.

47. Shapiro, J. B. and Weiss, W.: Tuberculous pericarditis with effusion; the impact of antimicrobial therapy. *Am. J. Med. Sc.* 225:229, 1953.

48. White, P. D.: Chronic constrictive pericarditis. *Circulation* 4:288, 1951.

49. Myers, T. M. and Hamburger, M.: Tuberculous pericarditis, its treatment with streptomycin and some observations on the natural history of the disease. *Am. J. Med.* 12:302, 1952.

51. Friedberg, C. K. and Gross, L.: Pericardial lesions in rheumatic fever. *Am. J. Path.* 12:183, 1936.

52. Thomas, G. T., Besterman, E. M. M. and Hellman, A.: Rheumatic pericarditis. *Brit. Heart J.* 15:29, 1953.

53. Messie, E. and Levine, S. A.: The prognosis and Subsequent developments in acute rheumatic pericarditis. *J.A.M.A.* 112:1219, 1939.

54. Nay, R. M.: The electrocardiogram in acute pericarditis. *J. of Indiana State Med. Asso.* 42:222, 1949.

55. Adams, R. and Poldeman, H.: Suppurative pericarditis. *New Eng. J. Med.* 225:897, 1941.

56. Wilkins, R. B., Jevis, F. J. and King, R. L.: Purulent pericarditis due to *H. influenzae*, type B. *Am. Heart J.* 42:749, 1951.

57. Shipley, A. M. and Winslow, N.: Purulent pericarditis. *Arch. of Surg.* 31:375, 1935.

58. Hunter, T. H.: Bacterial infections of the heart and pericardium. *Bull. of N. Y. Acad. Med.* 28:213, 1952.

# Clinico-Pathological Conference

UNIVERSITY OF CHICAGO CLINICS

**Presentation** *Dr. Jennings:* A 61-year-old man was seen at the University of Chicago Clinics on Jan. 26, 1953, in the emergency clinic, having been in coma for one day. The history as obtained from relatives revealed that he had complained of epigastric pain, headache, and weakness eight days before admission and that for four days he had had no urine output. He was seen by his family physician and given supportive treatment, but the malaise and headache persisted. The past history indicated that he had undergone an

iridectomy for acute glaucoma in 1952 and had an appendectomy at his community hospital for ruptured appendix on Nov. 7, 1952. During the operation the patient received a transfusion of whole blood. After the appendectomy he did poorly, showing fever and elevated blood sugar level. Extreme difficulty was encountered in his postoperative management, and his blood sugar values ranged from 300 to 390 mg. per 100 cc. for three weeks. Thereafter his condition gradually improved, and he was discharged on the 58th postoperative day in fair condition, taking a maintenance dose of 20 units of insulin per day.

**Physical examination** At the time of admission the patient was deeply icteric, the abdomen was soft, borborygmi were present, the blood pressure was 70/58 mm. Hg, the pulse was not obtainable, and the temperature was 36 C (96.8 F).

**Laboratory findings** There were 3,640,000 red blood cells and 16,750 leukocytes per cubic millimeter; hemo-

Conference was prepared under the supervision of Dr. Paul R. Cannon, Chairman, Department of Pathology. Dr. F. Lamont Jennings is an assistant professor of pathology and Dr. J. Garrott Allen is professor of surgery at the University of Chicago. A summary of this conference appeared in the Journal of the American Medical Association, 156:1498, 1954.

globin level was 10.5 gm. per 100 cc. Urinalysis showed dark brown urine with a specific gravity of 1.019, a trace of albumin, slight reduction of Benedict's solution, and bile, 4+. The urinary sediment showed 2 or 3 granular casts per low power field, an occasional hyaline cast, many bile casts, and bile staining of the sediment. The blood glucose level was 155 mg. per 100 cc. and the urea nitrogen, 76 mg. per 100 cc. Serum carbon dioxide was 11.5 mm. per liter, and the serum pH was 7.48. The cephalin flocculation test was 4+.

**Course** The patient was given 500 cc. of plasma immediately in the emergency clinic. This was followed by 1,500 cc. of isotonic sodium chloride solution; 500 cc. of 5% dextrose solution containing 4 mg. of arterenol was given intravenously in an attempt to raise the blood pressure. The blood pressure was elevated briefly to 100/60 mm. Hg., but then started to fall, and the patient died eight hours after admission.

**Anatomic diagnosis** The body of this patient measured 64 in. (162.5 cm.) in length, weighed 133 lb. (60.3 kg.), and showed a severe, generalized icterus. Within the abdominal cavity was about 250 cc. of dark, straw-colored fluid, and numerous peritoneal adhesions were present in the right lower quadrant. The liver appeared small, weighing 1,320 gm., and was well above the costal margin. The capsular surface of the liver was glistening and had a mottled, yellow-tan and dark red color. The texture was extremely soft and flabby. Over the cut surface the mottling was even more pronounced, with the yellow-tan areas predominating. Patches of congestion were scattered throughout.

Histologically the liver showed widespread acute necrosis, with only a few scattered islands of parenchymal cells remaining. The cells that remained showed enlarged, pale, vesicular nuclei. Very little inflammation was seen about the necrotic areas in the liver, and there was no apparent fibrous tissue proliferation. The bile ducts remained in surprisingly good condition in the necrotic regions. Fat stains showed little fatty degeneration. The appearance was that of acute massive necrosis of the type seen in infectious hepatitis or homologous serum jaundice.

The pancreas weighed 100 gm. and showed slight islet atrophy, with reduction in beta cells.

Both lungs showed edema, the right weighing 650 gm. and the left, 500 gm. In the right lung were small, round, fibrotic nodules filling many alveoli. These showed a patchy distribution through the lung and though not showing the usual pattern, probably represented silicotic nodules.

The spleen weighed 270 gm. and showed abundant hemosiderin in macrophages. Other incidental findings included pyelonephritis, chronic cystitis in the urinary bladder, adenomatous hyperplasia of the prostate, and a degenerated thyroid adenoma.

**Comment** *Dr. Allen:* This patient died with massive necrosis of the liver presumably due to homologous serum jaundice from one blood transfusion administered 80 days previously in the course of an emergency appendectomy. The problem the case presents concerns the value of the single 500 ml. blood transfusion in the adult patient. If blood loss has been excessive, the treatment of the shock incurred usually requires several blood transfusions. If one trans-

fusion is sufficient, as in this case, it is probable that liquid plasma stored for six months at room temperature before use, heated serum albumin, dextran, or glucose and water might have served equally well. These fluids do not carry the risk of transmitting homologous serum jaundice. If more excessive blood loss is encountered, the necessity of blood transfusion is clearer and the risk of withholding blood exceeds the risk that is entailed in its use.

There are other serious complications of blood transfusions that should not be overlooked when a single transfusion is to be administered. Among these are mismatched blood and sensitization of an Rh-negative patient by the administration of Rh-positive blood. In addition, there are causes of hypotension during operation that do not involve blood loss. These include hypoxia, spinal anesthesia, and the reflex hypotension associated with the manipulation of the abdominal viscera. Hypotension of these origins is due to vasodilation and not to blood loss. Correction of hypotension of these origins is accomplished by eliminating or treating the cause. If the blood loss has not been excessive and hypotension appears, it should be determined whether measures other than blood transfusion would not serve the purpose equally well or better. The decision is not always easy and at times taxes the judgment of the seasoned surgeon.

The risk of homologous serum jaundice developing from blood from a carefully screened donor is probably not less than 0.1% or more than 0.5%. As there is no laboratory method for detecting the carrier donor, this becomes one of the calculated risks that must be assessed before deciding that a single transfusion of blood is necessary.

Mortality from homologous serum jaundice is probably less than 10%.

The morbidity, however, is greater, as subacute or chronic hepatitis, which may eventually progress to cirrhosis and its troublesome complications years later, develops in a number of patients. No one knows what percentage of the patients in whom homologous serum jaundice develops never again have difficulties related to this disease.

These remarks are not to be interpreted as an indictment of blood transfusion if blood is needed. They are only intended to focus attention on the questionable value of the single transfusion in patients in whom other fluids might serve equally well. Such patients by no means fall into the surgical group alone. Many patients with iron deficiency anemia are given a single transfusion when suitable preparations of iron in conjunction with a diet adequate in proteins, vitamins, and calories would serve equally well. The use of the single transfusion constitutes one of the most commonly encountered abuses of blood transfusion.



PERRIN H. LONG, M.D.

## EDITORIALS

### **Dr. Arthur C. Jacobson**

I would like all who have been interested in MEDICAL TIMES to join with me in paying tribute to Dr. Jacobson, Editor of this publication since 1927, and Associate Editor for a number of years before that time. Beginning with this issue, Dr. Jacobson becomes Editor-in-Chief, Emeritus. Prior to Dr. Jacobson's assumption of the editorial chair, MEDICAL TIMES was local in scope, and provincial in outlook. Under his vigorous leadership, MEDICAL TIMES has become a Journal of national interest and breadth.

I feel that we are more than fortunate in having Dr. Jacobson's promise, that while he is retiring from the active direction of MEDICAL TIMES, in his capacity of Editor-in-Chief, Emeritus, he will continue to contribute to its editorial columns his personal observations gathered from the experience of more than fifty years in the practice of medicine in Brooklyn. I would like to

have all friends raise a figurative glass with me to Dr. Jacobson as we express our thanks, for his continuing interest in the progress and welfare of MEDICAL TIMES.

#### **Reactions Following the Administration of Antibiotics**

Recently, Welch et al.<sup>1</sup> have reported on reactions to antibiotics. As their report contains data which is not yet easily available to most physicians, comment about these data should be made.

Few of us stop and think about the quantities of antibiotics used in our country. In 1956, roughly 2,500,000 pounds (1250 tons) of antibiotics were produced in this country. While some seventeen antibiotics are available clinically, penicillin for human use, accounted for about twenty-five percent (597,589 pounds) of the total production. When penicillin was first released for public use about twelve years ago, the sodium, potassium, or calcium salts of amorphous penicillin were available for therapy. Today 121 preparations are available for clinical use. Over the years physicians have injected penicillin by all routes, it has been rubbed all over the body, sprayed in the throat and lungs, given as a medicament by mouth, and fed to us surreptitiously by dairy men (from five to ten percent of all milk consumed today contains detectable amounts of penicillin). It is probable that three-quarters or more of the people of our country have had one or more exposures to penicillin. It has saved thousands of lives and has made life worth living for many, many people. With all of this, the administra-

tion of penicillin has been accompanied by side reactions which have been more or less severe, and even fatal. Furthermore, it seems clear that as each year goes by, more and more people will become sensitized to penicillin. Currently, it is estimated that about five percent of our population is "sensitive" to penicillin.

Your Editor well remembers the first penicillin reaction which he witnessed. It occurred during the campaign in Sicily in 1943. In the battle for Sicily, limited amounts of penicillin were available for the treatment of incipient or established infections in our wounded. It was the custom in one of our evacuation hospitals to have the penicillin made up in solution in the pharmacy, from which it was taken to the ward tents for immediate injection. Within a matter of two or three weeks, one of the pharmacist-sergeants in this evacuation hospital developed a rather acute and severe conjunctivitis which was soon demonstrated to be caused by exposure to penicillin. This is probably one of the earliest instances of penicillin sensitivity. This patient developed his sensitivity rather rapidly. Others may be exposed to penicillin for a long time before trouble occurs. Welch et al.<sup>1</sup> cite a 65 year-old man who had about 100 injections of penicillin before developing an anaphylactoid reaction, and a young Negress who as far as history was concerned had never had any penicillin, but who developed an anaphylactoid reaction following an intramuscular injection of penicillin.

The authors cited above sampled the general hospitals in this country to de-

termine what had happened relative to antibiotic reactions. Hospitals containing about thirty percent of the general-hospital beds in this country constituted the sample and were queried. A total of 3,419 case records of reactions occurring during 1954, '55 and '56 were reported as severe by the physicians or hospitals involved. Some 424 case records were discarded for lack of adequate data. Of the remaining 2,995 case records 2,517 were concerned with reactions associated with the administration of penicillin. Thus, penicillin was involved in eighty percent of all the reactions which were reviewed in this survey. There were 1,925 reactions which, while serious, were not considered to endanger life, and among these, in 1,616, penicillin was considered to be the offending agent. Most of these reactions were eruptive in type. Percentage-wise, the administration of penicillin was associated in eighty-four percent of the 1,925 reactions.

In this study, 1,070 case records showed that the reactions could be classified as severe. Nine hundred and one of these records (84 percent) dealt with reactions to penicillin, eighty-three of which were fatal. The majority (793) of these severe reactions were anaphylactoid in type. No deaths occurred in anaphylactoid reactions which followed the ingestion of penicillin. (The Editor knows of one instance in which, when penicillin was given by mouth, a fatal reaction ensued.) In the sixteen instances of anaphylactoid reaction associated with antibiotics other than penicillin, two deaths were recorded. More anaphylactoid reactions were reported

in each succeeding year covered by this survey. It is obvious from this data that penicillin is producing the greatest number of reactions, and that it is the antibiotic most frequently involved in fatal reactions. It would also appear that mild, severe, or fatal reactions are less frequent when penicillin is administered by mouth. It also points up to physicians that *indiscriminate use of this highly antigenic antibiotic is reprehensible. Penicillin should only be administered when there are clear-cut indications for its use.*

Three instances of anaphylactoid reaction have been reported following the administration of one of the tetracyclines, and one reaction of this type has been reported from the use of chloramphenicol. Other types of allergic reaction, especially dermal reactions, are very rarely seen in the course of therapy with the tetracyclines or chloramphenicol.

However, following the administration of the so-called broad spectrum antibiotics, 107 instances of severe "super-infections" were recorded. Ninety-nine of these reactions were enterocolitis, and in seventy-four of these patients, *Micrococcus aureus* (staphylococci) were isolated. The tetracyclines were responsible for producing enterocolitis in eighty-five patients in this group. The majority of patients suffering from enterocolitis had had an abdominal operation, and of these forty percent died. Eight patients developed a severe moniliasis, four intestinal, two dermal, two pulmonary. One of the latter died. Based on the data of Welch and his co-workers<sup>1</sup>, one can conclude that super-

infection with fungi really does not constitute a serious problem with antibiotic therapy. Of the seventy reported severe skin reactions, exfoliative dermatitis was noted fifty-one times. Sixteen instances of anaphylactoid purpura and three of erythema multiforme were noted. Seven patients died in the group having severe skin reactions.

There was a definite increase in the use of chloramphenicol in the period of three years covered by this survey. That this use has been under careful supervision and indicated is substantiated by the few blood dyscrasias (sixteen instances) associated with the administration of chloramphenicol. The data obtained in this survey seemed to substantiate the authors' previous observations that white children under twelve years of age are most frequently affected by the blood dyscrasias. In this age group females are affected two or three times more frequently than are males, and usually there is a history of prolonged or frequent illness including various allergic disorders. Physicians should keep this point in mind and only use chloramphenicol as a life-saving agent in patients who have prolonged or frequent illness, or who are known to have allergic manifestations.

There were 1,936 patients who developed angioneurotic edema in this series. Thirty-eight of them had respiratory or cerebral involvement as well, and were classified as being life-threatening. Thirty-seven of these reactions were associated with the administration of penicillin, while one followed the use of chloramphenicol.

It is clear from a study of the results

of this survey that penicillin produces the majority of the severe reactions and fatalities that follow the administration of antibiotics. While isolated instances of misuse, such as wives or mothers taking penicillin which had been prescribed for their husbands or children, or neighbors giving each other injections of penicillin (yes, this does occur!) may be followed by reactions, the vast majority of adverse reactions follows the administration of penicillin under the supervision of a physician. But, as the authors point out, while the number of reactions looms large during the three-year period covered by this survey, the equivalent (600 tons) of over two billion average daily doses of 300,000 units each were produced.

I. Welch, H., Lewis, C. N., Weinstein, H. I. and Boeckman, B. B.: *Antibiotic Medicine and Clinical Therapy*. December, 1957. *Antibiotics Annual, 1957-58*. Medical Encyclopedia, Inc., 30 East 60th Street, New York, N. Y.

#### **Medical Ethics and Etiquette**

Modern medical ethics and etiquette are primarily a development of the Anglo-Saxon community, although ethics and medical ethics originated in ancient Hellenic philosophy. Interestingly enough, the so-called Christian Oath of Hippocrates is a document which deals almost entirely with idealism—i.e., “ethics” in medicine, and has but a single sentence which is concerned with rules of conduct among physicians—i.e., “etiquette”.

Thomas Percival, a physician of Manchester, England, may be considered the father of modern medical ethics and etiquette. His “Code,” which was developed over several years, had the aim

---

of bringing about harmonious relations between the physicians in the Manchester Infirmary, late in the eighteenth century.

Percival's "Medical Ethics" became the source book for State medical societies which were interested in developing "codes of ethics" in our own country in the early 1800's. Indeed, many of these "codes" were essentially verbatim copies of Percival's "Ethics". When the first national "Code" was adopted at the organizational meeting of the American Medical Association in 1847, the committee which presented the first edition of the "Principles of Medical Ethics" to the Association acknowledged its deep debt to Thomas Percival.

The "Principles of Ethics" of the American Medical Association has been revised four times. In the course of the most recent revision (June, 1957), all excess verbiage was removed from the "Principles," which now consists of a Preamble and ten short Sections. In a series of articles on the "Principles," your Editor will present studies on the historical and present significance of its Preamble and of each of its Sections. It is hoped that physicians will then have a clearer understanding of the philosophy, scope, and meaning of the current "Principles," together with a clear understanding of the difference between "Ethics" and "Etiquette."

### Doctors Should Think Twice

Under the title of "Accident or Injury" which appears in this issue, Dr. Durman has brought to our attention a matter which should concern all physicians, as it affects the well-being of all of us as well as the prestige of our profession. It has to do with telling patients who have been in an accident or exposed to an industrial, or other hazard, that their symptoms stem from that accident or exposure.

We all know that court awards in civil liability suits are going up and up. We also know, and are becoming concerned about, how the premiums of our own automobile, malpractice, and other forms of liability and casualty insurance are increasing. Let us not be factors in bringing about these increases by loose professional practices, loose thinking, or loose talking. We should adopt the policy of keeping quiet about explanations of patients' symptoms until we are certain that our opinions are based on sound scientific fact. We must not as physicians be responsible for producing iatrogenic maladies in our patients.

However, if the facts prove that symptoms and illnesses are directly related to an accident or hazardous exposure, then we should heartily support our patient in his efforts to obtain reasonable compensation for his injury.

---

# THE LONG AND SHORT OF IT

## **Research and Development Expenditures of the Pharmaceutical Industry**

During 1956 a survey made by the American Drug Manufacturers Association indicated that the pharmaceutical industry spent \$110,000,000 in research and development of new products. Of this amount \$99,000,000 was spent within the industry while \$11,000,000 was spent in contracts or in grants-in-aid with outside organizations. Of this later sum, roughly \$9,000,000 went to educational institutions, research institutes, foundations and hospitals. In the current year it is estimated that the industry will spend \$10,500,000 in the same areas.

## **Hospital Staphylococci**

"A survey was made in a general hospital to determine the prevalence, phage type, and antibiotic resistance pattern of *Staphylococcus pyogenes aureus* in staff, patients, and hospital air. Altogether 440 coagulase-positive staphylococci were isolated. They consisted of 243 strains from symptomless nasal carriers, 141 strains from hospital air, and 56 strains from cases of staphylococcal infection within the hospital.

FROM  
YOUR EDITOR'S  
READING

All 440 strains isolated were bacteriophage typed and tested for sensitivity to six commonly employed antibiotics.

Nasal carrier rates were determined for five different groups: staff doctors and graduate nurses, student nurses, nursing assistants, in-patients and outpatients. Approximately 50% within each group were found to be carrying coagulase-positive staphylococci in their anterior nares.

First-year student nurses entering training without ward exposure were found to have a carrier rate of 43%. This was lower than the rate in second- and third-year student nurses, who possessed 52% and 53% carrier rates respectively.

Fifty-six cases of staphylococcal infection were diagnosed within the hospital during the nine-months' period of this investigation. Patients' charts revealed that 36 of the 56 cases were "admitted" to hospital with their infection, while 20 of the infections were classified as "institutional". Results showed a marked difference in the strains isolated from "admitted" cases as compared with those isolated from "institutional" infections. "Admitted" strains showed a rather low degree of antibiotic resistance, and indeed one-third were sensitive to all six antibiotics employed. "Institutional" strains were all resistant to one or more antibiotics, 65% possessing resistance to three or more of the six antibiotics used.

The most resistant strains of coagulase-positive staphylococci found within the hospital were those isolated from the anterior nares of in-patients. In this group 80% of the strains isolated were resistant to penicillin; 42% to streptomycin; 46% to terramycin; 44% to aureomycin; and 2% to erythromycin.

Strains isolated from the hospital air also possessed a high degree of resistance. Of these, 77% were resistant to penicillin; 48% to streptomycin; 42% to terramycin; 30% to aureomycin; and 3% to chloramphenicol.

Although 89% of the strains isolated from symptomless nasal carriers on the hospital staff were resistant to penicillin, resistance to these strains to the five other antibiotic agents was relatively low.

Phage typing results showed that strains of phage group II, regardless of source, were generally quite sensitive. In contrast, the strains possessing marked resistance were lysed by phages belonging to groups I, III and Miscellaneous.

The "Canadian hospital" strained lysed by phage type 81 was found to be well represented in cases of infection. It was carried by a high percentage of in-patients as well as by a high percentage of doctors and nurses, and was also common among isolations made from the hospital air. Only a low percentage of student nurses and nursing assistants carried type 81 strain."

By J. E. JOSEPHSON, M.D.  
and RALPH W. BUTLER, M. Sc.  
*The Canadian Medical Association Journal*, Vol. 77, No. 6, p. 575, Sept. 15, 1957.

#### Medical Insurance

At the end of 1956, analyses made by the Health Insurance Institute indicated that 66,300,000 people in the United States were covered for hospital expenses through individual, or family health, or group insurance programs. Almost 63,000,000 people have insurance coverage for surgical expenses, while roughly 30,000,000 have coverage

for certain types of medical expenses. Roughly 10,000,000 persons have coverage for all major medical expenses through insurance programs. None know better than our readers of the enormous growth of insurance programs during the past ten years. There is every reason to expect a continuation of this growth.

#### **Chronic Sodium Chloride Toxicity: The Protective Effect of Added Potassium Chloride**

"Unquestionably the finest and greatest of all physiologic experiments was Claude Bernard's with a single rabbit, accomplished all within six weeks. From it flowed the entire concept of endogenous as different from exogenous metabolism. For two weeks he fed the rabbit vegetables. It passed a cloudy alkaline urine. For two weeks he fed the rabbit meat. It passed a clear acid urine. For the final two weeks he fed the rabbit nothing. It passed a clear acid urine. From this he concluded the rabbit was eating meat during that last two weeks. Rabbit meat. Think now also about *terra naturae*, their medical and surgical emergencies. If a saber-toothed tiger encountered a woolly mammoth, apt with his tusks, he might come out of the affair with a real "Saturday night" set of contusions, lacerations and fractures. He would lie where he fell, or at best nearby where he could crawl. Whether he lived or died would then depend entirely upon the physiologic resources built into him for the emergency by eons of evolution due to the fact that nursing service was so poor for saber-toothed tigers. While on the one hand he would not be roused from his sleep at five to be bathed, and then wait three hours for breakfast, and thus by some

would be considered blessed to die in peace, yet neither would food and water be given to him. He would have to start at once on a diet of saber-toothed tiger meat, and this, mind you, without water. As he digested himself kilogram by kilogram, a growing awareness of a new kind of problem would dawn upon his kidneys. The kidneys, of course, had already successfully handled the immediate problems of the day of the violence, correctly interpreting the abrupt diminution in renal arterial blood pressure as evidence their master's throat had been cut, and so ceasing to form urine or, if the emergency seemed just a little less dire, reducing the *urine obligatoire* at most. This maneuver, designed of course to save the precious remaining supply of water and salt, together with the tiger meat-eating regimen, soon sets the stage for the new difficulty. With 20 times (more or less) as much potassium in the juices of the cells as in the extracellular water, the kidney must face the tricky matter of dumping potassium to prevent intoxication with this now undesirable catabolite, while simultaneously holding tenaciously to its needed and dwindling supply of water and sodium. How well advised it would be to enlist the aid of that yellowish body above it, asking for a copious supply of aldosterone to aid it in its difficult and vital task."

This anecdote is not mere whimsy. Armchair philosophy may have its drawbacks, and teleologic reasoning is always false, but it certainly is not foolish and it does not seem false to suggest that, while there is important survival value in an ability on the part of the terrestrial animal kingdom to conserve sodium chloride and water in times of emergency, there is no evident cir-

cumstance among wild animals requiring conservation of potassium. Indeed, the reverse must be the case. Whether the animal obtained sustenance from the world around it or from the tissues of its own body, whatever else may have been lacking, there was no dearth of potassium. Rather, in most situations, there was an embarrassment of this particular riches. While herbivores do indeed go to salt licks—and this might serve as an excuse for a salt cellar on every table—no animal but the human extracts the potassium from its food by boiling it in water and throwing the water away. A legacy of evolution is an embarrassingly good mechanism for water and salt retention which is excellently efficient for excess potassium excretion. The lack, however, of a potassium-conserving mechanism, together with our propensity for discarding cooking liquids, may well have all of us, or most of us, in or near potassium deficiency. That potassium is an effective antagonist to the toxic action of sodium chloride will be clearly evident from the data below. It remains a speculation that potassium deficiency may be a real threat to human health. An adequate supply of it is life-ensuring for the salt-eating rat."

by G. R. MENEELY, C.O.T. BALL  
and J. B. YOUNAN.

*Annals of Internal Medicine*, Vol. 47,  
No. 2, pp. 263-64-65, August, 1957.

#### Cerebral Vascular Disease

Strokes and other effects of cardiovascular disease caused an estimated 179,000 deaths in 1956. More than 2 million people are currently incapacitated or handicapped as a result of cerebral vascular disease. Nearly a quarter of all patients admitted to certain

mental hospitals have disease of their cerebral arteries. Nine out of ten patients who survive a stroke can be taught to walk again, while three out of ten can get back to a gainful occupation. These and other interesting facts about strokes can be obtained free by writing for "Cerebral Vascular Disease and Strokes", Public Health Service Publication No. 513: Heart Information Center, National Heart Institute, Bethesda 14, Maryland.

#### Cryptococcus Meningitis Arrested with Amphotericin B

"In this case the diagnosis of cryptococcus meningitis was established by the spinal fluid studies. The results of the mouse inoculations furnished absolute proof that the organisms isolated from the spinal fluid were pathogenic. It is difficult to appraise the significance of the positive toxoplasmin test, unless one assumes that the patient had had toxoplasmosis at some time in the past. The association of chorioretinitis with that disease is well known. Since there was no history of rheumatic fever or evidence of a luetic infection, and since the blood cultures were consistently sterile, the nature and pathogenesis of the valvular heart lesions are matters of speculation. It is well to bear in mind that on rare occasions cryptococcosis may involve the heart, including the endocardium and valves.

The tendency toward spontaneous remissions in cryptococcosis is well known and makes evaluation of drugs difficult. However, in the case reported here it would seem that arrest of the infection was related to the amphotericin. This is based largely on the marked sensitivity of the isolated organism to the drug and on the pronounced clinical

and spinal fluid improvement observed shortly after the institution of the parenteral regimen. It must be admitted that the time that has elapsed since the termination of therapy is inadequate for a final appraisal of the drug.

It is of interest to note that the amphotericin was well tolerated by the patient in both the oral and the parenteral forms. The only untoward reactions noted were a short episode of diarrhea and evidence of transitory impairment of renal function, which was suggestive of nephrotoxicity."

by EMANUEL APPELBAUM

and SINOVIJ SHTOKALKO

*Annals of Internal Medicine*, Vol. 47,  
No. 2, p 350, August, 1957.

### Insulin Reactions

"The mechanism of insulin reactions is poorly understood. Formerly all insulin reactions were considered to be the result of hypoglycemia; however, experience has shown that the severity of the symptoms is not always proportional to the degree of hypoglycemia. In fact, symptoms such as hunger, tremulousness, sweating, and palpitation have frequently been observed in patients with normal or slightly elevated blood sugar. In general these symptoms are mild, but they may be very troublesome to the patient and even prevent good control of his diabetes.

Although Joslin states that no member of his group has observed an insulin reaction associated with a blood sugar level above 80 mg. per 100 cc., he further states that a rapid fall to a level slightly below 100 mg. per 100 cc. might give rise to symptoms that would hardly be felt under normal circumstances. Most observers believe that it is the rapid fall in blood sugar rather

than the final level reached that brings about this apparent paradox of hypoglycemic symptoms without hypoglycemia. In sharp contrast with the above is the apparent absence of symptoms in the presence of severe degrees of hypoglycemia. Blood sugar levels as low as 40 to 50 mg. per 100 cc. have frequently been reported in individuals who apparently do not have symptoms. The wording 'apparently do not have symptoms' has been used advisedly, since signs of hypoglycemia may often be found after a careful search. A slight increase in physical or intellectual activity may often reveal the true situation and bring on more obvious symptoms. This type of reaction has become fairly frequent following the use of long-acting insulins.

The obvious similarity between such symptoms as sweating, tremulousness, palpitation, etc., produced by an injection of epinephrine, and those that occur in hypoglycemia was first pointed out by Boothby and Wilder in 1923. The theory that the symptoms of hypoglycemia might be due to an increase in circulating epinephrine was then further strengthened by the actual demonstration of an increase in circulating vasoconstricting substance, presumably epinephrine, in the presence of hypoglycemia. It was also shown that epinephrine not only brought about the release of glucose from the glycogen of the liver but also reduced the demands of the peripheral tissues on the circulating glucose. Epinephrine was thus shown to be an effective agent for elevating the blood sugar in the presence of hypoglycemia.

The association of the symptoms of disturbances in behavior, speech, vision, and consciousness early implicated the

central nervous system in the causation of insulin reactions. In 1929 Joslin suggested that the effect of hypoglycemia on the central nervous system might be related to depressed activity of certain oxidative processes similar to that occurring in asphyxia. The demonstration that carbohydrate was the chief or only source of energy for nerve tissue tended to substantiate this theory. Studies by Himwich and others indicated a correlation between the degree of hypoglycemia and a reduction in activity of various brain centers. The higher centers were the first to fail, while a successive failure of lower centers occurred as the blood sugar continued to fall.

This theory and the supporting ob-

servations are fairly satisfactory in explaining the phenomena observed in hypoglycemic states rapidly induced by shock doses of fast-acting insulin. It does not explain the apparently contradictory nature of the central nervous system's reaction to the more gradually induced hypoglycemia seen in patients receiving long-acting insulins for the treatment of diabetes mellitus. The absence of symptoms in the presence of a blood sugar of 40 mg. per 100 cc. also remains a mystery."

by ROBERT K. MADDOCK  
and LEO P. KRALL  
*Diabetes*, Vol. 6, No. 5, p. 441, Sept.-Oct., 1957. (Reprinted from *Arch. of Int. Med.*, June, 1953.)



## **Current Status of the Medical**

**E. CLINTON TEXTER, JR., M.D.**  
Chicago, Illinois

"The gastrointestinal tract is the organ system which—aside from the skin—is involved in the earliest and main contact with other people and, by that token, is related to experiences and expressions of earliest emotions.

Intake of food (and sometimes of medicine), gains a significance far beyond the more metabolic one: to be fed by the mother or her substitute, becomes synonymous with being cared for and loved generally. Every doctor is familiar with the person who, under stress or disappointment, will eat and overeat—as though food would indeed be equated with love and satisfaction and have a pacifying and sedating effect. Some cases of hyperacidity—and the possibly related ulceration—have been conceptualized as due to constant psychic appetite secretion of an individual who wants to be 'fed' (and loved) all the time."

Bellak<sup>1</sup>

## Treatment of Peptic Ulcer

This discussion will not be directed solely toward the psychosomatic aspects of peptic ulcer. However, the gastrointestinal tract is replete with psychologic and psychiatric implications and to ignore these is to ignore an important aspect of treatment.<sup>2</sup> It is paramount to keep in mind that each patient is an individual, and that as an individual, his treatment must be individualized accordingly.

The pathophysiology of the underlying disease state forms the other basis for treatment. Naively, we have tended to ascribe the cause of a disease frequently to a single etiologic factor, thereby ignoring the multiple factors which may be operating. Earlier concepts of disease, influenced largely by the brilliant discoveries of the microbiologists of the previous century, tended to ignore the host reaction. The resistance of the host may be a more important factor than the nature of the noxious agent or agents.<sup>3</sup> Care centered about the whole patient has been termed psychosomatic medicine, comprehensive medicine and *wholistic* medicine. Although these studies have advanced our

knowledge of disease processes as well as the knowledge of the patient's reaction to illness, an undesirable outcome has become apparent, viz. that there is an incompatibility between the practice of the "art" and "science" of medicine. Chapman<sup>4</sup> has written:

"The necessity for taking into account all the factors bearing on the patient's illness can hardly be questioned. The vast importance of the psychiatric aspects of disease, whether primarily mental or organic, is surely unquestionable. So also is the necessity for adequate rapport between the doctor and the patient. . . . But the primary purpose of medicine, and its very *raison d'être*, is to provide the patient with scientific medical care at the highest possible level. Beyond this, anything the physician can do for his patient is all to the good, but it does not stand to reason that he can, in addition to being a good doctor in the scientific sense, be equally competent in the role of the religious leader, the economic planner and the social worker. The greatest danger of all lies in the fact that,

should he attempt to be everything to all men, he may neglect his responsibilities as a scientist. The sole feature, after all, that distinguishes the physician from healers of all sorts is the acquired ability to cope, scientifically and methodically, with human disease. Medicine is and must continue to be a learned profession, not a disjointed collection of technics with no theoretic basis."

Peptic ulcer is a prime example of the interaction of multiple etiologic factors which vary from patient to patient and in the same patient from time to time requiring treatment based on knowledge of both the "art" and "science" of medicine. "It is only through an understanding of the impact of the multiple etiologic factors in disease on the host that the mechanisms whereby they disturb normal physiology can be elucidated. Only then can one grasp a truly basic understanding of disease processes and lay a groundwork for satisfactory symptomatic or curative procedures."<sup>5</sup>

**Basis for Treatment** In many areas of medicine, treatment is compounded from empiricism, clinical impression, and to a lesser degree controlled clinical observation. The treatment of peptic ulcer is no exception. Rational treat-

ment for the patient with a peptic ulcer should take into account two factors: (1) the altered physiology underlying the disease state and (2) the therapeutic situation in which treatment is employed. Treatment should be directed toward correcting, if possible, the underlying causes of the disease and toward maintenance of the doctor-patient relationship so that a satisfactory treatment program can be carried out.

The aims of treatment are three-fold: (1) to relieve symptoms, (2) to heal the ulcer, and (3) to prevent recurrences. Relief of symptoms, which is achieved rather easily, is an important aspect of treatment.<sup>6</sup> Relief of symptoms, however, is not equivalent to healing of the ulcer. Lastly, it is essential to evaluate the effectiveness of therapy for peptic ulcer in terms of the incidence of recurrences.<sup>7</sup>

**General Principles** The etiologic factors underlying peptic ulcer can be classified into three categories: (1) the eroding factors, both chemical and mechanical, (2) local tissue resistance factors, and (3) systemic and constitutional factors.<sup>8</sup> Peptic ulceration only occurs in the areas of the gastrointestinal tract which come in contact with hydrochloric acid. Hypersecretion is the usual finding in patients with duodenal ulcer. The observations of Wolf and Wolff<sup>9</sup> on their fistulous subject, Tom, indicate that hypersecretion is usually accompanied by increased gastrointestinal motility and mucosal engorgement. The degree of mucosal engorgement is difficult to study except in fistulous subjects. The data available indicates that mucosal engorgement decreases both the pain threshold and increases the facility with which erosions develop.

---

From the Gastroenterology Laboratory and the Departments of Medicine, V. A. Research Hospital, Passavant Memorial Hospital and Northwestern University Medical School, Chicago, Ill.

Presented in part at the Seminar on Gastroenterology, Division of Postgraduate Education, College of Medicine, University of Florida, Jacksonville, Florida, June 21-23, 1956.

Investigative studies were supported in part by a Research Grant (RG 4633) National Institutes of Health, Public Health Service.

Recently, continuous recording of intraluminal pressure from the stomach and duodenum with concurrent fluoroscopic study of gastrointestinal motor activity has been used to quantitate gastrointestinal motor activity.<sup>10,11</sup> Increased motor activity was observed in patients with peptic ulcer as compared to normal subjects during the period of evacuation from the stomach of a meal consisting of barium sulfate in 0.1 N hydrochloric acid. A further increase in motor activity of the distal stomach and duodenum was observed in patients who developed ulcer distress during the study. No qualitative differences were observed in the phasic intraluminal pressure wave from the ulcer patient as compared to the normal subjects.<sup>12</sup>

A decrease in the defense factors of the stomach may be related to decreased production of mucous and other components of the non-parietal alkaline secretion<sup>13</sup> and ischemia.<sup>14</sup> Local tissue factors are more important in the development of gastric ulcer which is infrequently accompanied by hyperacidity.

The systemic and constitutional factors are less well understood. Heredity appears to be of some importance based both upon the incidence of ulcer in identical twins, as well as the preponderance of type O blood in patients with peptic ulcers compared to control groups. Draper and Touraine<sup>15</sup> classify heredity as a predisposing factor operating as "selective, environmental action upon a favorable constitutional terrane."

The relationship of hormones to peptic ulcer has been recently reviewed by Kirsner.<sup>16</sup> There is no consistent relationship between primary endocrine disturbances and peptic ulcer in man, although peptic ulcer is occasionally

associated with endocrine tumors.<sup>17</sup> Observations on experimental animals indicate that the gastrointestinal tract is highly sensitive to stressful conditions.<sup>18</sup> Although ACTH has been implicated as the cause of these erosions, such ulceration can occur in the absence of the pituitary or adrenal glands.

Local hormonal factors may be involved. Two gastrointestinal hormones gastrin and enterogastrone, have been identified. Gastrin has a stimulatory effect upon hydrochloric acid production whereas enterogastrone has an inhibitory effect. The relationship of enterogastrone to the inhibitory substance effecting gastric secretion observed by Dragstedt and others<sup>19</sup> is not clear.

Cushing pointed out the association of peptic ulcer with intracranial disease. Acute ulceration has also been reported following neurosurgical procedures,<sup>20</sup> cardiac surgery,<sup>21</sup> and other types of surgery.<sup>22</sup> In all of these situations, stress has been implicated as an etiologic factor. Numerous other factors have been discussed in the recent review by Kirsner et al.<sup>23</sup> Some of these will be touched upon in relation to treatment.

## THERAPEUTIC AGENTS

The medical treatment for peptic ulcer can be discussed under the following headings: (1) general measures, (2) drug therapy, (3) psychotherapy and (4) other measures.

**General Measures** General measures include the use of rest and restriction of activity, diet therapy and restriction of nicotine, alcohol and caffeine.

**Rest** Rest is an important phase of treatment. It is remarkable how quickly patients become asymptomatic when

put to bed in a hospital. Physical relaxation, extra sleep, and relief of tension probably contribute to the clinical response. The blood supply to the ulcerated area is improved when the patient is in the horizontal position. However a more important factor concerns psychological aspects of ulcer therapy. When the patient is in the hospital separate from his usual worries and responsibilities, he can follow a prescribed ulcer program better than when treated on an ambulatory basis.

**Diet** Dietary treatment attempts to (1) avoid foods which stimulate secretion of hydrochloric acid, (2) to include foods which are capable of neutralizing hydrochloric acid, and (3) to avoid foods which may be mechanically or thermally irritating.

Most patients admitted to the hospital as well as ambulatory patients can be started on second stage management consisting of three small meals a day supplemented by intermediate feedings of milk and cream. Supplemental vitamins should be administered. With clinical improvement the diet can be liberalized.

Although the value of diet in the active phase of peptic ulcer is well recognized, its effect upon the long term course of the ulcer patient has been subjected recently to critical scrutiny.<sup>24</sup> Doll and associates<sup>25</sup> noted, "The value of a special diet has never been demonstrated by control series of observations, and it must be presumed that its use has continued partly by reasons of tradition, partly on theoretical grounds (ill supported in practice) that 'bland' foods stimulate less secretion than other foods and do not 'irritate' the ulcer physically, and partly because patients given a restricted diet tend to lose their

pain." On the basis of his own controlled studies, Doll concluded that a bland diet had no merit over a more liberal almost normal diet for patients with peptic ulcer. Lawrence<sup>26</sup> came to similar conclusions.

Rae and Allison<sup>27</sup> in their study of the effect of diet and regular living conditions upon the natural history of peptic ulcer noted that the majority of their patients dieted or took alkalies regularly only when their symptoms recurred. They interpreted this as indicating that the natural history of peptic ulcer was the main factor which determines whether a patient will persevere with treatment.

Although diet has been shown to influence experimental ulcers,<sup>28,29</sup> the factors which influence the healing of experimental ulcers and those which determine the clinical course of the ulcer patient may vary considerably.

Although it has been reported that dietary treatment reduces the incidence of recurrences,<sup>30,31</sup> the more recent data do not support these observations. The recent studies also counteract the over-emphasis which has been placed on the value of dietary treatment of peptic ulcer. Many patients attribute their symptoms entirely to dietary indiscretions, not realizing that dietary restrictions are but one aspect of therapy.

**Restriction of Caffeine, Alcohol and Nicotine.** Restriction of coffee and caffeine containing beverages is generally recommended. Caffeine induces the secretion of gastric juice high in acid and low in pepsin.<sup>32</sup> Although many feel that ulcer management is improved by elimination of caffeine containing beverages, controlled clinical data on this point is not convincing. None the less it would appear to be

sound treatment to restrict the use of caffeine containing beverages.

Alcohol stimulation results in a gastric juice high in acidity possibly through a central nervous system action.<sup>22</sup> Alcoholic beverages should be curtailed in patients with active ulcers. Recommendations to the patient regarding the use of alcohol during the interim phase of treatment must be individualized. It would appear reasonable to assume that the postprandial ingestion of alcoholic beverages would have less of a stimulatory effect than when imbibed prior to meals.

There is no good evidence that tobacco smoking stimulates gastric secretion or motility. Nevertheless it would appear desirable to curtail smoking by the ulcer patient.<sup>23</sup> In practice this is frequently a difficult problem.

### Drug Therapy

**Antacids** The antacids include the soluble alkalies and the non-systemic antacids. Hardt and Rivers<sup>24</sup> in 1923 pointed out that one could get toxic manifestations following the use of soluble alkalies for peptic ulcer. Patients with renal disease were more likely to develop alkalosis. More recently, Burnett and associates<sup>25</sup>, have reported hypercalcemia without hypercalciuria or hypophosphatemia following prolonged intake of milk and alkali (the milk-alkali syndrome). Because of their potential toxicities, the soluble alkalies are seldom used except in proprietary antacids. The most frequently prescribed antacids consist of aluminum, magnesium and calcium compounds.

Antacids are used to counteract the hyperacidity of the gastric secretion found in most ulcer patients. Peptic activity is also decreased with the re-

duction in gastric acidity as pepsin has no significant digestive action above pH 3.5 and is destroyed above pH 7.<sup>26</sup> Because of the danger of systemic alkalosis, complete neutralization of the gastric contents is undesirable. It has been estimated that on standard Sippy management, from 25 to 50 times more ant-acid than is customarily given than would be required to neutralize the total daily output of hydrochloric acid.<sup>27</sup>

Ideally an antacid should be palatable and non-irritating to the stomach. It should not have any toxic effects and its action should be confined to the alimentary tract. It should not produce systemic alkalosis and should not interfere with digestion. An antacid should elevate the pH of the gastric content to insure not only neutralization of free acid but also inactivation of pepsin, that is to a pH of approximately 4.5. A satisfactory antacid should be able to maintain the pH of the gastric content at this level for appreciable periods of time without subsequent rebound activity.<sup>28</sup>

A non-systemic antacid contains cations which are poorly absorbed and have no direct effect upon the acid base equilibrium of the blood. Some of the non-systemic antacids react chemically with hydrochloric acid-forming salts. Others merely bind the hydrochloric acid when in an acid medium, releasing the chloride when in an alkaline medium. Most of the studies of antacid effectiveness have been based upon *in vitro* studies. Magnesium oxide and magnesium carbonate are effective neutralizers of hydrochloric acid.<sup>29, 41</sup> Calcium carbonate has a rapid action, magnesium trisilicate a slower one, and aluminum hydroxide an intermediate reaction. The fact that the antacid is slow-

ly reacting *per se* does not necessarily indicate that it has a prolonged antacid effect *in vivo*. The factors which affect *in vivo* duration include the acid combining powers of the dose administered, the rate of gastric secretion, the rate of gastric emptying and the rate of reaction between acid and the antacid.<sup>42</sup> Rossett and Rice<sup>43</sup> attempted to simulate the situation in the stomach for *in vitro* evaluation, by using a beaker containing hydrochloric acid which represented the hydrochloric acid of the stomach. The continuous secretion of hydrochloric acid was simulated by the addition of hydrochloric acid to the beaker. This did not account for the loss of antacid from the stomach into the duodenum. Using this technique, they found that tablet preparations of aluminum hydroxide compounds were much less effective than equivalent amounts of liquid gel, in maintaining the pH above 3. Only one aluminum compound, dihydroxy-aluminum amino acetate in tablet form, was more effective than aluminum hydroxide in tablet form or the equivalent amount of its liquid counterpart. Aluminum hydroxide gel combined with milk of magnesia was a more effective antacid than aluminum hydroxide gel alone.

Studies of the effectiveness of several antacids were made by measuring gastric pH at 15-minute intervals during a 60-minute control period and for 120 minutes following administration of the dose of the antacid. The combination of aluminum hydroxide and magnesium hydroxide was relatively ineffective, only rarely raising the pH to above 4.5.<sup>44</sup> The most effective liquid preparation was polyamine methylene resin. The tableted antacids were not found to be very effective. Only one antacid tablet,

a wafer containing milk solids in combination with magnesium trisilicate, magnesium oxide, magnesium carbonate and calcium carbonate (Nulacin)<sup>®</sup> was found to have a significant effect. The tablet is dissolved slowly in the mouth allowing the gradual release of its antacid ingredients into the stomach. Douthwaite and Shaw<sup>45</sup> found that the milk-alkali tablets strikingly reduced gastric acidity and that their effect was more prolonged than that obtained by any customary forms of alkali therapy apart from the milk-alkali drip. In view of the ineffectiveness of most of the tableted antacids, the milk alkali tablet would appear to be the antacid of choice for ambulatory therapy.

It is apparent that antacids as currently used are less effective than have been generally supposed. One can administer sufficient antacid to the hospitalized patient to decrease the acidity of the gastric contents. However even the combination of antacids with effective antisecretory agents is seldom sufficient to maintain the pH of the gastric contents above 4.5 throughout the 24-hour period.<sup>46</sup>

**Anticholinergic Drugs** The anticholinergic drugs include the belladonna alkaloids, the synthetic tertiary amines, and the synthetic quaternary amines.<sup>47</sup> Inhibition of the motor activities of the gastrointestinal tract can be demonstrated following adequate dosage with these agents but only the more recently synthesized quaternary amines possess a satisfactory antisecretory effect. Quaternary amine drugs having a significant depressant effect upon gastric secretion include Cantil<sup>®</sup>, Darbid<sup>®</sup>, Elorine<sup>®</sup>, Malcotran<sup>®</sup>, Marplan<sup>®</sup>, Monodral<sup>®</sup>, Pamine<sup>®</sup>, Piptal<sup>®</sup>, Pro-Banthine<sup>®</sup>, Scopolate<sup>®</sup>, Tricoloid<sup>®</sup> and

Tral<sup>®</sup>,<sup>47,48</sup> Darbid<sup>®</sup> and long-acting Pro-Banthine<sup>®</sup> have the advantage of maintaining satisfactory antisecretory effect for approximately 12 hours so that administration is usually necessary only twice daily.<sup>49</sup>

The newer anticholinergic drugs are a useful adjunct in the treatment of a patient with an active ulcer. Their most striking clinical effect is upon ulcer distress. The prompt symptomatic relief appears to be due primarily to their depressant effect upon gastroduodenal motor activity.<sup>51,50,51</sup>

The value of the anticholinergic drugs during the interim phase of treatment is not as clearly established. When prolonged anticholinergic therapy was administered to patients with well established patterns of recurrences, the recurrences appeared to be fewer and milder.<sup>52,53</sup> The incidence of complications however, and the necessity for surgery, was not altered in the treated group as compared to the control group. It is possible that the symptomatic improvement noted in the patients on long term therapy was related to the depression of the mechanism for production of ulcer pain. Some have expressed concern that prolonged administration of anticholinergic drugs may be hazardous in the management of peptic ulcer by masking the symptoms, in particular that of the perforating ulcer. However the data available does not support this concept.<sup>47,52,55</sup>

The use of anticholinergic drugs is rational due to their effect in promoting a more favorable environment for healing the ulcer. They are not necessary for all patients with ulcers, but constitute a useful adjunct in selected patients, particularly those having more severe distress. *The anticholinergic drugs are con-*

*traindicated in the presence of organic pyloric stenosis and in patients with prostatic obstruction and glaucoma.* The major criticism which can be leveled at the anticholinergic drugs is that "so prevalent and at times ritualistic is the employment of anticholinergic drugs that the unwary physician may come to rely too heavily on them and tend to overlook those situations where their use can be expected to accomplish nothing or to be actually contraindicated."<sup>56</sup>

**Sedatives and Tranquilizers** Sedatives and more recently the tranquilizing drugs have been used as adjunct treatment. Although phenobarbital has been employed for many years, its exact contribution to ulcer management has never been clearly established. Encouraging results have been reported from uncontrolled clinical studies with meprobamate. Meprobamate is not known to have any effect upon gastric secretion or motility. Reserpine is probably contraindicated in view of its stimulatory effect upon gastric secretion and gastrointestinal motility.<sup>57,58</sup> Hematemesis and melena have followed its use.<sup>59</sup>

Some depression of gastric secretory volume was noted following administration of chlorpromazine.<sup>57</sup> The preliminary data appears to indicate that another related phenothiazine derivative (Compazine<sup>®</sup>) has an antisecretory action as well as an inhibitory effect upon reserpine induced hyperacidity.<sup>60</sup> The rationale underlying the use of the tranquilizing agents relates to their presumed inhibitory effect upon stress induced gastric secretion and ulceration.<sup>18,61</sup>

**Psychotherapeutic Aspects** Two approaches have been used to study the psychosomatic aspects of peptic ulcer: (1) the relationship of gastric function

to stress, and (2) the correlation between the personality of the patient and the incidence of peptic ulcer. These form the basis for the psychotherapeutic approach to peptic ulcer.

More than 100 years ago Beaumont, in studies of his fistulous subject, Alexis St. Martin, noted that reddening of the mucosa might follow an emotional upset. Wolf and Wolff<sup>6</sup> found depression of gastric secretion and depression of gastrointestinal motor activity and vascularity was associated with withdrawal from stressful stimuli. The opposite effect was associated with repressed or unexpressed aggression. Recently, Engel and his co-workers<sup>62</sup> carried out studies on gastric secretion on an infant girl with a gastric fistula. An increased output of gastric acid was associated with any outgoing emotional or physical state and a depression of gastric secretion occurred only when the infant appeared to be depressed.

The ulcer patient has been described as a tense, ambitious driving individual who is typically the go-getter, promoter or executive.<sup>63, 64</sup> Not infrequently ulcer patients hold down several jobs at a time and achieve more than the usual material success. This is not a universal pattern however.

Inasmuch as both secretory and motor activities of the stomach can be influenced by the emotional state, it is reasonable to assume that improvement in emotional factors may assist in restoring these functions toward normal. A sympathetic approach to the patient's problems may be of value in calming apprehension and relieving anxiety. Some have indicated that all therapy should be directed toward the patient rather than toward the ulcer.<sup>65</sup> Although there is merit in this provocative suggestion, it

would appear that better therapeutic management would be achieved by using conventional therapy in addition to psychotherapy.

A satisfactory physician-patient relationship is an essential part of psychotherapy.<sup>66, 67</sup> The physician-patient relationship represents an interaction between two persons with varying degrees of participation. Their relationship may be either an active-passive one, a guidance-cooperation one, or a mutual participation one.

Different types of physician-patient relationships are appropriate for varying circumstances. Although the active-passive role may be necessary in the treatment of the more seriously ill patient, it would appear desirable to work toward a mutual participation role in which the patient is treated as a full fledged partner in the management of his own health.

It is essential to know the patient in a comprehensive fashion. Conflicts which are not too deep seated may be uncovered and helped. Knowledge by the patient of the mechanisms operative in the development and maintenance of an ulcer is helpful. Certainly, management is improved, if the patient understands that ulcer tends to be a recurring problem which is controlled rather than cured.<sup>68</sup>

**Other Measures** A variety of therapeutic agents have been advocated for the treatment of peptic ulcer over the years only to be discarded with the passage of time. Almost all of the hormones have been tried at one time or another. Inhibitory hormones such as enterogastrone and urogastrone depress secretory activity in the dog, but similar results have not been demonstrated in man. Clinical studies do not indicate

that enterogastrone and related substances are of value in the treatment of peptic ulcer. The real value of the extract derived from pregnant mare's urine (Kutrol<sup>®</sup>) remains in doubt.

Radiation therapy directed toward the fundus and body of the stomach may result in decreased secretion of acid and healing of the ulcer. Ricketts and Palmer<sup>69</sup> feel that after radiation therapy the incidence of recurrences is reduced. The most satisfactory results were obtained in patients with gastric ulcer.

#### DURATION OF TREATMENT

Most physicians recommend that a dietary program be followed strictly for six months and less strictly for another 18 months after the patient has demonstrated ulcer activity. In view of the recent studies, it is questionable how beneficial strict diet therapy is in preventing recurrences. Antacids and anticholinergic drugs are useful in the acute phase and the suggestion has been made that they may be of value in preventing recurrences but this is not clearly established at the present time.

**Treatment of Gastric Ulcer** The major problem in the treatment of patients with gastric ulcer concerns the difficulty in distinguishing benign from malignant ulceration. It is almost mandatory that patients with gastric ulcers be treated in the hospital where periodic study can be made of the roentgen appearance of the ulcer, supplemented by gastric analyses, stool examinations for occult blood, gastroscopy, and study of the exfoliated cytological material. The criteria utilized for distinguishing between benign and malignant ulceration have been discussed.<sup>70</sup> Only patients with gastric ulcers having no evidence of malignancy and showing a good re-

sponse to treatment, should be continued on medical management. Usually a decision can be made within three or four weeks of hospitalization whether the patient is making satisfactory progress on a medical program or whether surgical intervention is then indicated.

#### TREATMENT OF COMPLICATIONS

Ulcer complications requiring treatment include perforation, hemorrhage, obstruction, and walled-off perforation. Surgical therapy is usually indicated for the patient with a perforated ulcer, although encouraging reports have appeared concerning the non-surgical approach in selected cases.<sup>71</sup>

Most instances of gastrointestinal bleeding secondary to ulcer can be handled satisfactorily medically. In addition to diet, antacids and sedation, adequate blood replacement is necessary. The patient should be allowed to eat as soon as nausea and vomiting have receded. Careful evaluation must be made of the patient's condition concerning the use of blood. In case of chronic bleeding where the hemoglobin is below 7.5 grams, transfusion is indicated; if the hemoglobin is above 10 grams, transfusion is usually not necessary. Packed red cells when available, is the ideal replacement material. Measurement of blood pressure and pulse, as well as tabulating the frequency of bowel movements are useful clinical criteria concerning the rate and degree of bleeding. If shock is present, this takes precedence in treatment regardless of the hematologic values which may be normal. Occasionally one may have to resort to the determination of the circulating red cell mass using one of the radioisotope techniques. Surgical treat-

ment is indicated for patients with continuing or recurrent hemorrhage.

Obstruction, which is the result of edema, can be satisfactorily treated with nasogastric suction plus a gastric #1 diet. The stomach is aspirated on admission to the hospital and nasogastric suction maintained during the overnight period. The milk and cream mixture along with antacids is fed during the day. The amount of gastric aspirate removed as well as the degree of gastric retention noted on roentgen study can be used as criteria of the patient's clinical condition.

Surgical treatment will be required if the obstruction does not respond to a medical program.

The perforated walled-off ulcer is one of the more difficult complications to manage. Many of these patients have atypical pain patterns and respond poorly to therapy. Perforated walled-off ulcers account for many of the patients who have intractable distress. Some of these patients will respond to intensive medical management including nasogastric suction and anticholinergic agents, but most will eventually require surgical therapy.

### Summary

*The basis for rational therapy of the patient with peptic ulcer depends upon understanding both the pathophysiology underlying the ulcer as well as the factors entering into the treatment situation. Therapeutic approaches include the use of rest, diet therapy, antacids, anticholinergic drugs, sedatives and tranquilizers, psychotherapy and restriction of nicotine, alcohol and caffeine. The use of these approaches, their relationship to the pathophysiology of ulcer, and their value in the treatment of*

*the patient with an ulcer has been discussed.*

*Gratifying results can be obtained in the majority of patients during the acute phase of the ulcer problem. Some progress has been made toward reducing the incidence of recurrences. It is essential that ulcer treatment be individualized and based upon sound physiologic principles. The modifications in the treatment program for a patient with gastric ulcer as well as for a complicated ulcer have been discussed briefly.*

### References

1. Bellak, Leopold. *Psychology of Physical Illness*. New York, Grune & Stratton, 1952, p. 29.
2. Texter, E. C. Jr. (ed.) *Medical grand rounds—Psychosomatic aspects of peptic ulcer*. Am. J. Digest. Dis. 1:126-140, 1956.
3. Hinkle, L. E. Jr. and Plummer, N. The "host factor" in human illness: The occurrence of differences in general susceptibility to illness among a group of adult men. Clin. Res. Proc. 2:102, 1954.
4. Chapman, C. B. On the teaching of the science of medicine. Clin. Res. Proc. 4:161, 1956.
5. Sodeman, W. A. *Pathologic physiology—Mechanisms of Disease* ed. 2. Philadelphia, W. B. Saunders Co. pp. 3-6, 1956.
6. Modell, W. The full treatment—a modern view of the relief of symptoms. New England J. Med. 255:1079-1084, 1956.
7. Ivy, A. C., Grossman, M. I. and Bachrach, W. H. *Peptic Ulcer*. Philadelphia, Blakiston, pp. 872-963, 1950.
8. Smith, L. A. and River, A. B. *Peptic Ulcer. Pain Patterns, Diagnosis and Medical Treatment*. New York, Appleton-Century-Crofts, 1954, p. 115.
9. Wolf, S. and Wolff, H. G. *Human Gastric Function. An Experimental Study of a Man and His Stomach*. New York, Oxford University Press, 1943.
10. Texter, E. C. Jr. and Smith, H. W. Quantitative study of gastrointestinal motor activity.

J. Clin. Investigation 35:739, 1956.

11. Smith, H. W., Texter, E. C. Jr., Stickley, J. H. and Berborka, C. J. Intraluminal pressures from the upper gastrointestinal tract. Part I Correlation with motor activity in normal subjects and patients with ulcer distress. *Gastroenterology* 32:1013-1024, 1957.

12. Smith, H. W. and Texter, E. C. Jr. Characteristics of the phasic intraluminal pressure waves of the stomach and duodenum. Studies in normal subjects and ulcer patients. *Am. J. Digest. Dis.* ns. 2:318-325, 1957.

13. Hollander, F. The two component mucous barrier. Its activity in protecting the gastroduodenal mucosa against peptic ulceration. *A.M.A. Arch. Int. Med.* 93:107, 1954.

14. Palmer, E. D. and Buchanan, D. P. On the ischemic basis of "peptic" ulcer I. Historical definition of present status. *Ann. Int. Med.* 38:1187, 1953.

15. Draper, G. and Touraine, G. A. Management unit and peptic ulcer. *Arch. Int. Med.* 49:616-662, 1932.

16. Kirsner, J. B. Hormones and peptic ulcer, in Craig, R. L. (ed.) *Hormones in Health and Disease*, New York, Macmillan, 1954, p. 300.

17. Fisher, E. R. and Flandreau, R. H. Multiple endocrine tumors and peptic ulcer. *Gastroenterology* 32:1075-1094, 1957.

18. Porter, R. W., Brady, J. V., Conrad, D. G. and Mason, J. W. Occurrence of Gastrointestinal lesions in behaviorally conditioned and intracerebral self-stimulated monkeys. *Fed. Proc.* 16:101-102, 1957.

19. Smith, W. O., Hoke, R., Landy, J., and Wolf, S. The nature of the inhibitory effect of normal human gastric juice on Heidenhain pouch dogs. *American Gastroenterological Association Meetings*, Colorado Springs, Colorado, May 17, 18, 1957.

20. Davis, L. Wetzel, N. C. and Davis, R. A. Acute upper alimentary tract ulceration and hemorrhage following neurosurgical operation. *Surg. Gynec. & Obst.* 100:51, 1955.

21. Berkowitz, D., Wagner, B. M. and Uricchio, J. F. Acute peptic ulceration following cardiac surgery. *Ann. Int. Med.* 46:1015, 1957.

22. Griffith, Belton, G., Lewson, L. R. and Moore, D. L. Stress ulceration of the gastrointestinal tract: Clinical characteristics. *Gastroenterology* 32:404, 1957.

23. Kirsner, J. B., Kassner, R. S. and Palmer, W. L. Peptic ulcer: Review of recent literature pertaining to etiology, pathogenesis and certain clinical aspects, in Dock, W. and Snapper, I. (ed.) *Advances in internal medicine*, Vol. VIII, Chicago, Yearbook Publishers, 1956, pp. 42-124.

24. Texter, E. C. Jr. Editorial—Value of diet in treatment of peptic ulcer. *Am. J. Digest. Dis.* ns. 2:130, 1957.

25. Doll, R., Friedlander, P., and Pygott, F. Dietetic treatment of peptic ulcer. *Lancet* 1:5, 1956.

26. Lawrence, J. S. Dietetic and other methods in the treatment of peptic ulcer. *Lancet* 1:482, 1952.

27. Ree, J. W. and Allison, R. S. The effect of diet and regular living conditions on the natural history of peptic ulcer. *Quart. J. Med.* 22:439, 1953.

28. Mann, F. C. and Bollman, J. L. Experimentally produced peptic ulcers—development and treatment. *J.A.M.A.* 99:1576, 1932.

29. Fauley, G. B. and Ivy, A. C. Experimental gastric ulcer: The effect of the consistency of the diet on healing. *Arch. Int. Med.* 46:524, 1930.

30. Althenau, T. L. Prevention of recurrences in peptic ulcer. *Ann. Int. Med.* 30:544, 1949.

31. Flood, C. A. Recurrences in duodenal ulcer under medical management. *Gastroenterology* 10:184, 1948.

32. Roth, J. A., Ivy, A. C. and Atkinson, A. J. Caffeine and "peptic ulcer" ulcer: Relation of caffeine and caffeine-containing beverages to the pathogenesis, diagnosis and management of "peptic" ulcer. *J.A.M.A.* 126:814, 1944.

33. Hirschowitz, B. I., Pollard, M. H., Margolin, S. W. Jr. and London, J. The action of ethyl alcohol on gastric acid secretion. *Gastroenterology* 30:244, 1956.

34. Ivy, A. C., Grossman, M. I. and Bachrach, W. H. *Peptic Ulcer*, Philadelphia, 1950, p. 406.

35. Batterman, R. and Ehrenfeld, I. Influence of tobacco smoking, upon the effectiveness of antacid therapy in the management of the peptic ulcer patient. *J. Clin. Investigation* 27:524, 1948.

36. Hardt, L. L. and Rivers, A. B. Toxic manifestations following the alkaline treatment of peptic ulcer. *Arch. Int. Med.* 31:171, 1923.

37. Burnett, C. H., Gammons, R. R., Albright, F. and Howard, J. E. Hypercalcemia without hypercalcuria or hypophosphatemia, calcinosis and renal insufficiency—a syndrome following prolonged intake of milk and alkali. *New Eng. J. Med.* 240:787, 1949.

38. Berborka, C. J. and Texter, E. C. Jr. *PEPTIC ULCER—DIAGNOSIS AND TREATMENT*. Boston, Little Brown, 1955, p. 100.

39. Wosika, P. H. and Emery, E. S. Jr. The effectiveness of the Sippy regimen in neutralizing the gastric juice of patients if the amount of alkali is not varied. *Ann. Int. Med.* 9:1070, 1936.

40. Berk, J. E. Drugs commonly used, and the mechanism of their action in Sandweiss, D. J. (ed.) *PEPTIC ULCER*, Philadelphia, Saunders, 1951, p. 343.

41. Kirsner, J. B. A further study of the effect of various antacids on the hydrogen ion concentration of the gastric content. *Am. J. Digest. Dis.* 8:53, 1941.

42. Grossman, M. I. Editorial: Duration of action of antacids. *Am. J. Digest. Dis.* ns. 1:453-454, 1956.

43. Rosett, N. E. and Rice, M. L. Jr. An in vitro evaluation of the efficacy of the more frequently used antacids with particular attention to tablets. *Gastroenterology* 26:490, 1954.

44. Texter, E. C., Jr. Unpublished data.

45. Douthwaite, A. H. and Shaw, A. B. The

control of gastric acidity. *Brit. M. J.* 2:180, 1952.

46. Sun, D. C. H. and Shay, H. Optimal effective doses of anticholinergic drugs in peptic ulcer therapy. *A.M.A. Arch. Int. Med.* 97:442, 1956.

47. Texter, E. C. Jr. and Ruffin, J. M. Drugs affecting the autonomic nervous system. Parts I and II. Clinical application in gastrointestinal disorders. *South. M. J.* 49:910, 1076.

48. Kirsner, J. B., Ford, H. and Kessriel, R. S. Anticholinergic drugs in peptic ulcer. Their current status. *Med. Clin. N. Amer.* p. 495 (March) 1957.

49. Texter, E. C. Jr. Unpublished data.

50. Legerton, C. W. Jr., Texter, E. C. Jr. and Ruffin, J. M. The mechanism of relief of pain in peptic ulcer by Bantline. *South. M. J.* 45:310, 1952.

51. Hightower, N. C. Jr. and Gambill, E. E. The effects of Bantline on pain and antral gastric motility in patients with duodenal ulcer. *Gastroenterology* 23:244, 1953.

52. Texter, E. C. Jr., Legerton, C. W. Jr., Ruffin, J. M., Atwater, J. S., Cayer, D., Cheney, F. D., Jackson, R. A., Oren, B. G. and Rumball, J. M. Prolonged drug therapy in peptic ulcer. I. An evaluation of Bantline as an adjunct to conventional ulcer therapy. *South. M. J.* 46:1062, 1953.

53. Cayer, D. Prolonged anticholinergic therapy of duodenal ulcer. *Am. J. Digest. Dis.* n.s. 1:301, 1956.

54. Roth, J. L. A., Wechsler, R. L. and Bokus, H. L. Hazards in the use of anticholinergic drugs in the management of peptic ulcer disease. *Gastroenterology* 31:493, 1956.

55. Kirsner, J. B. Editorial: Anticholinergic compounds in peptic ulcer. *Gastroenterology* 32:953, 1957.

56. Cummins, A. J. Use and abuse of anticholinergic drugs in the management of gastrointestinal disease. *Ann. Int. Med.* 46:352, 1957.

57. Haverbeck, B. J., Stevenson, T. D., Sjoerdsma, A. and Terry, L. L. The effects of reserpine and chlorpromazine on gastric secretion. *Am. J. M. S.* 230:601-604, 1955.

58. Schneider, E. M. and Clark, M. L. Hyperchlorhydria induced by intravenous reserpine. *Am. J. Digest. Dis.* n.s. 1:22, 1956.

59. Hollister, L. E. Hematemesis and melena complicating treatment with Rauwolfa alkaloids. *A.M.A. Arch. Int. Med.* 99:218, 1957.

60. Schneider, E. M. Gastric secretion as influenced by Rauwolfa alkaloids. American College of Physician's meeting, Boston, April 8-12, 1957.

61. Shay, H. and Sun, D. C. H. Stress and gastric secretion in man. I. A Study of the mechanisms involved in insulin hypoglycemia. *Amer. J. M. Sc.* 228:630, 1954.

62. Engel, G. L., Reichsman, F. and Segal, H. L. A study of an infant with a gastric fistula. *Psychosomatic Medicine* 18:374, 1956.

63. Wilensky, A. O. Psychosomatic factors in gastroduodenal disease. *Rev. Gastroenterol.* 14:435, 1947.

64. Sullivan, A. J. and McKell, T. E. PERSONALITY IN PEPTIC ULCER. Springfield, Ill. Thomas, 1950.

65. Palmer, E. D. Editorial: the trouble we're in over duodenal ulcer. *Am. J. Digest. Dis.* n.s. 2:128 (March) 1957.

66. Szasa, Thomas, S. and Hollander, M. C. A contribution to the philosophy of medicine. The basic models of the doctor-patient relationship. *A.M.A. Arch. Int. Med.* 97:585, 1956.

67. Bogdanoff, M. D. The effect of the physician's "psyche" upon the patient's "soma". *Ann. Int. Med.* 46:886, 1957.

68. Zetzel, L. Treatment of peptic ulcer. *New England J. Med.* 248:976, 1953.

69. Ricketts, W. E. and Palmer, W. L. Radiation therapy in peptic ulcer, in *Sendweiss, D. J. (ed.) PEPTIC ULCER*. Philadelphia, Saunders, 1951, p. 381.

70. Texter, E. C. Jr. The gastric ulcer problem. *Illinois M. J.* 109:1-5 (Jan.) 1956.

71. Taylor, Hermon. Nonsurgical treatment of perforated ulcer. Guest lecture American Gastroenterological Association Meeting, Colorado Springs, Colorado, May 17, 18, 1957.

**Gastroenterology Laboratory**  
**Northwestern University Medical School**  
**303 East Chicago Avenue**

# Cobalt-Iron Therapy in the Treatment and Prevention of the Anemia of Prematurity

FETHI TEVETOGLU, M.D.,

From the Driscoll Foundation Children's Hospital, Corpus Christi, Texas

KEMAL OZKARAGOZ, M.D.,

From Santa Rose Hospital, San Antonio, Texas

**I**n the normal infant, at birth, hemoglobin values are relatively high, stainable marrow iron is slight and erythropoiesis is active.<sup>1,2,3</sup> A significant series of changes promptly occurs. Hemoglobin values fall rapidly, erythropoiesis decreases strikingly and stainable marrow iron rises.<sup>1,2</sup> After a period of five to seven weeks, the hemopoietic system again becomes active and "adult hemoglobin" gradually replaces the fetal hemoglobin<sup>4</sup>. Hemoglobin values at birth are of the order of 20 grams per 100 cc. They rapidly fall to lower levels during the period of marrow inactivity and level out at 10 to 12 grams for several months thereafter.<sup>1</sup>

The normal infant doubles his blood volume and red cell mass during the first year of life<sup>5</sup>. Endogenous iron is insufficient for the necessary hemoglobin formation and exogenous iron is required. If the supply is inadequate, iron deficiency makes its appearance when endogenous iron is exhausted. Iron-deficiency anemia develops, therefore, most commonly after three to four months of life.

An anemia of different etiology, however, is often seen. Characterized as the "early anemia" of infancy, it occurs during the first four to eight weeks and is presumably due to failure of the marrow to resume full erythropoietic activity after the temporary postnatal hiatus.

The problem of anemia in premature infants does not differ in kind but only in degree. Premature infants are subject to a greater incidence of both "early anemia" and of subsequent iron deficiency. The frequency with which the hemoglobin value in premature infants falls to dangerously low levels poses a serious problem to the pediatrician. In addition to the hemopoietic problem itself there is the increased liability to infection which may constitute a grave consequence.<sup>6</sup>

Present therapy leaves much to be desired. The "prophylactic" administration of iron has proved to be of little value during the first two months of life.<sup>4</sup> This failure of iron therapy in preventing the "early anemia" of infancy could, of course, have been predicted had the etiology of the condition been more thoroughly understood. Nor has the early "prophylactic" use of iron as a means of preventing the later iron deficiency been successful.<sup>4</sup> The recent recognition that iron absorption is dependent upon erythropoietic activity<sup>7</sup> doubtless accounts for the failure of iron therapy in the latter instance. At the low level of erythropoietic activity existing in the infant at the time "prophylactic" iron must be given, iron is simply not absorbed.

Transfusion is sometimes necessary although never desirable. It is especially to be avoided in the "early anemia" since the transfusion further inhibits

the already sub-active marrow.<sup>4</sup> Transfusion, therefore, tends to prolong the primary cause of the anemia.

The obvious role of therapy is two-fold. First, to employ such prophylactic measures as will restore erythropoietic activity before hemoglobin values fall to dangerously low levels. Second, to increase the availability and absorption of exogenous iron as a safeguard against subsequent iron deficiency.

Since cobalt can stimulate hemopoiesis, its use in preventing or treating the "early anemia" seems logical. The activation of erythropoiesis should result in increased absorption of exogenous iron if the latter is available in the intestine.<sup>7</sup> Simultaneous administration, therefore, of cobalt-iron would seem to be of possible value.

These considerations and the results of earlier studies by one of us<sup>8</sup> led us to evaluate the efficacy of cobalt-iron therapy\* in the prevention and treatment of anemia in a group of premature infants.

**Materials and Methods** This study was based on observations in 30 infants, all of premature birth. They were admitted to the premature wards of the Driscoll Foundation Children's Hospital, Corpus Christi, Texas or to Santa Rosa Hospital, San Antonio, Texas from the maternity wards of other hospitals or after home delivery. They remained in the hospital during the entire period of study.

On admission and for two succeeding days, all patients received parenterally 200,000 units of crystalline cocaine

\* Roncovite Drops, containing 40 mg. cobalt chloride and 75 mg. ferrous sulfate per 0.6 cc., supplied by Lloyd Brothers, Inc., Cincinnati, Ohio.

TABLE I HEMOPOIETIC RESPONSE OF PREMATURE INFANTS TO COBALT-IRON AND IRON THERAPY

PATIENT	APPROXIMATE MONTHS GESTATION	BIRTH WT. GM.	AGE IN WKS. MEDICATION BEGUN	DURATION (WKS.)	INITIAL HGB GM%	INITIAL RBC X10 <sup>6</sup> /MM <sup>3</sup>	FINAL HGB GM%	FINAL RBC X10 <sup>6</sup> /MM <sup>3</sup>
COBALT-IRON TREATMENT								
L. M.	7	1690	6 (2320)*	8 (3580)**	8.0	2.9	11.0	4.3
A. M.	8	1850	9 (2925)	5 (4510)	9.0	3.1	11.5	4.2
J. G.	7	1570	7 (2410)	8 (3910)	8.5	3.7	12.0	5.1
O. I.	7 1/2	1790	8 (3020)	4 (3980)	9.0	3.8	12.0	5.0
R. A.	7	1725	6 (2830)	8 (4050)	9.5	3.9	12.5	4.8
W. F.	8	1825	9 (3070)	4 (3860)	8.0	3.1	11.0	4.0
J. P.	8	1950	8 (3550)	4 (4380)	9.0	2.9	10.5	3.8
J. S.	7	1460	6 (2450)	8 (3960)	8.5	3.5	11.5	4.5
P. G.	8	1825	8 (2925)	4 (3740)	9.0	3.8	11.5	4.5
A. L.	7 1/2	1720	7 (2810)	6 (3980)	8.5	3.0	11.0	4.0
A. V.	7 1/2	1741	7 1/2 (2831)	6 (3995)	8.7	3.4	11.5	4.4
IRON TREATMENT								
F. R.	6 3/4	1725	7 (2540)	16 (4340)	9.0	3.5	10.5	4.3
J. P.	7	1660	8 (2730)	12 (3880)	9.0	3.6	10.5	3.8
L. Z.	8	1790	9 (2950)	18 (4670)	8.5	3.0	11.5	4.1
B. G.	8	1610	8 (3100)	15 (4320)	8.5	3.2	11.0	3.7
R. T.	8 1/2	1630	8 (2840)	14 (3950)	8.0	2.8	10.5	3.7
N. G.	8 1/2	1340	6 (2360)	20 (4280)	9.0	3.3	11.0	3.8
N. Ca.	8 1/2	1800	7 (2830)	16 (4460)	9.0	3.0	11.5	3.1
L. B.	7	1480	7 (2760)	14 (4100)	8.5	3.1	10.5	3.8
A. V.	7 3/4	1837	7 1/2 (2764)	15.6 (4292)	8.7	3.2	10.9	3.9

\* Body weight in grams at beginning of study.

\*\* Body weight in grams at end of study.

TABLE II THE HEMOPOIETIC RESPONSE OF TWIN PREMATURE INFANTS TO

PATIENT	ESTIMATED GESTATION (MONTHS)	MEDICATION GIVEN	DURATION OF MEDICATION (WKS. OF LIFE)	HEMOGLOBIN GM%	
				INITIAL	FINAL
J. R. (1)	7	Cobalt-Iron	6 to 12	8.7	11.0
J. R. (2)	7	Iron	6 to 12	8.0	8.5
G. G.	7	Cobalt-Iron	1 to 8	16.0	11.5
F. G.	7	Iron	1 to 8	17.0	8.5

penicillin-G, 0.250 grams dihydrostreptomycin, 5 mg. of vitamin K (aqueous) analog and the equivalent of 50 mg. of vitamin C.

Infants weighing under 1800 grams were isolated and kept in incubators for a short time when necessary. All patients received the same formula and the same multivitamin preparation.

Blood for hematologic studies was obtained by heel puncture. Hemoglobin determinations were done in the Haden-Hauser hemoglobinometer by the acid-hematin method. Erythrocyte counts were done by standard methods.

The infants received the medication orally, usually with their formula. The single daily dosage provided 40 mg. of cobalt chloride and 75 mg. of ferrous sulfate. Control patients receiving iron alone were given twice this dose of ferrous sulfate. Exceptions to this dosage regime are noted in the text. Both medicaments were commercial liquid preparations.

**Results** A group of 18 infants of premature birth whose hemoglobin values had fallen below 10 grams per 100 cc. on or after the sixth week of life were selected for study. These patients were typical of those with the "early anemia" of infancy since initial hematologic values indicated no iron deficiency and

hemopoiesis, at this age, should have been active. The group which received cobalt and iron included 6 females and 4 males. The group receiving iron alone was composed of 5 males and 3 females. Hemoglobin and red cell determinations were done at weekly intervals.

Results are shown in Table I. The infants in the two groups were closely comparable except in their response to treatment.

All 10 of the patients treated with cobalt-iron, except one reached an 11-gram hemoglobin level within eight weeks of treatment. It was not possible to follow the single exception after the fourth week of treatment. Nine of the 10 achieved erythrocyte levels of 4 million cells/cmm. or higher.

In contrast, only 4 of 8 patients on iron alone reached a hemoglobin level of 11 grams per 100 cc., even after prolonged treatment. At the end of six weeks therapy, the average hemoglobin and erythrocyte values were 9.1 grams and 3.3 million cells/cmm. respectively, which is much lower than the comparative six-week values for the group receiving cobalt-iron.

Weight gain during cobalt-iron treatment averaged 194 grams per week per patient. With iron alone the averaged gain was 98 grams a week for the sixteen

## COBALT-IRON AND TO IRON ADMINISTRATION

ERYTHROCYTES $\times 10^6/\text{MM.}^3$		BODY WEIGHT (GRAMS.)	
INITIAL	FINAL	INITIAL	FINAL
3.2	4.9	2955	4330
3.2	3.6	2925	4005
5.3	4.3	1585	2960
5.6	3.2	1630	2780

weeks and 71 grams for the first six weeks of treatment.

The twins, J.R.<sub>1</sub> and J.R.<sub>2</sub>, were prematurely born after an estimated seven months' gestation. After five weeks of life a marked anemia developed in both. One of the twins received 20 mg. cobalt chloride and 37½ mg. ferrous sulfate for two weeks and then 40 mg. of cobalt chloride and 75 mg. of ferrous sulfate daily for six weeks; the other received 75 mg. of ferrous sulfate daily for two weeks and then 150 mg. for the same period. Results are shown in Table II.

The twins F. G. and G. G. were likewise born after an estimated 7 months' gestation. Twin G. G. received a dose of 20 mg. cobalt chloride and 37½ mg. ferrous sulfate. Twin F. G. received 75 mg. of ferrous sulfate daily. Therapy was begun on the fourth day of life and continued through the eighth week. Results are shown in Table II.

A series of 12 consecutive premature infants were given 40 mg. of cobalt chloride and 75 mg. of ferrous sulfate daily for eight weeks beginning on the fourth day of life. At the conclusion of treatment, none of the group showed hemoglobin values below 10 grams per 100 cc.; 9 had hemoglobin levels above 11 grams. These values averaged higher than the usual expectancy, thus indi-

cating that early cobalt-iron treatment may aid in preventing the early anemia of infancy as has been shown by Coles and James<sup>6</sup>. Results are shown in Table III.

**Discussion** It has been pointed out by Coles and James<sup>6</sup> that the administration of cobalt and iron during early infancy prevents the subsequent development of iron deficiency anemia. Quilligan<sup>8</sup> has reported the postnatal hemoglobin fall is somewhat slower when cobalt-iron therapy is instituted promptly after birth.

In our series of 12 cases who received cobalt-iron therapy beginning on the fourth day of life, we found no instance in which hemoglobin fell below 10 grams per 100 cc. The case of the twins F.C. and G.G. is also of interest in this regard. In our opinion, routine use of cobalt-iron therapy for a period of two months in the newborn provides a useful prophylactic therapy in the prevention of the "early anemia" of infancy.

In infants with a developing "early anemia" of infancy as evidenced by hemoglobin levels below 10 grams per 100 cc. at the fifth or sixth week of life, cobalt-iron treatment appears to be advantageous. In our group of 10 such infants, a prompt response was obtained within four to eight weeks. Our experience with iron therapy in this condition confirms that of others<sup>6, 8</sup> that cobalt-iron is much superior. The case of the twins J.R.<sub>1</sub> and J.R.<sub>2</sub> offers an interesting comparison.

A very common finding associated with the anemia of infancy is a decreased gastric acidity.<sup>10</sup> This would lend to poor iron absorption and prolongation of the anemia. Since cobalt has been shown to correct the anemia in patients with gastrectomy<sup>11</sup> and in children with

TABLE III HEMOPOIETIC RESPONSE OF PREMATURE INFANTS TO COBALT-IRON  
ADMINISTERED FOR EIGHT WEEKS BEGINNING ON THE FOURTH DAY OF LIFE

NAME	APPROXIMATE GESTATION PERIOD (MONTHS)	BIRTH WT. (GM.)	HEMOGLOBIN (GM./100ML.) AT EIGHT WEEKS	RBC ( $\times 10^6$ MM. <sup>3</sup> ) AT EIGHT WEEKS
F. S.	8	1800	12.0	4.2
V. S.	8	1950	11.0	4.1
F. C.	8	2000	11.0	4.1
D. V.	8½	1900	11.0	4.0
A. G.	7½	2060	12.5	4.3
N. G.	7	1025	10.5	3.8
A. R.	7	1575	10.5	3.2
R. T.	7	1670	10.7	4.0
M. M.	7	1600	11.0	3.4
P. M.	7	1000	11.5	3.8
S. B.	7	1650	11.5	4.1
D. R.	7½	1800	11.0	3.7

achlorhydria<sup>6,12</sup> cobalt must promote iron absorption even in the absence of gastric acidity. This may be a partial explanation of the beneficial results obtained with early administration of cobalt-iron.

Neither toxic symptoms nor intolerance were observed during the administration of cobalt-iron. Weight gains and the general health of the infants were

completely satisfactory.

The therapeutic results of cobalt-iron therapy in our limited series of cases would seem to indicate that temporary postnatal hemopoietic stimulation in the infant is a useful prophylactic measure in the prevention of the "early anemia" of infancy. Cobalt-iron therapy also appears to be of value in the treatment of this condition after its development.

### Summary

*In a series of premature infants, prompt postnatal cobalt-iron therapy appeared to be an effective prophylactic measure in the prevention of the "early anemia" of infancy.*

*In premature infants with the "early anemia" of infancy, cobalt-iron therapy is both prompt and effective in increasing hemoglobin*

*levels and erythrocyte counts. This is in contrast to the relative ineffectiveness of iron therapy in this condition.*

*Our patients experienced neither toxic symptoms nor side effects from the administration of 40 mg. of cobalt chloride and 75 mg. of ferrous sulfate per day during treatment for periods of two months.*

## References

1. Smith, C. H.: Anemias in Infancy and Childhood: Diagnostic and Therapeutic Considerations. *Bull. N.Y. Acad. Med.* 30:155, 1954.
2. Seip, M., and Halvorsen, S.: Erythrocyte Production and Iron Stores in Premature Infants During the First Months of Life. *Acta Paediatrica* 45:600, 1956.
3. Shapiro, Z. M., and Bassen, F. A.: Sternal Marrow Changes During the First Week of Life. *Am. J. Med. Sci.* 202:341, 1941.
4. Schulman, I., Smith, C. H., and Stern, G. S.: Studies on the Anemia of Prematurity. *Am. J. Dis. Children* 88:567, 1954.
5. Brines, J. K., Gibson, J. G., and Kunkel, P.: The Blood Volume in Normal Infants and Children. *J. Pediat.* 18:447, 1941.
6. Coles, B. L., and James, U.: The Effect of Cobalt and Iron Salts on the Anemia of Prematurity. *Arch. Dis. Childhood* 29:85, 1954.
7. Bothwell, T. H., Pribilla, W., and Hurtado, A., Jr.: The Role of Erythropoietic Activity in Regulating Iron Transport. *VIII International Congress of the International Soc. of Hematology*, p. 235, 1956.
8. Tevetoglu, F.: The Treatment of Common Anemias in Infancy and Childhood with a Cobalt-Iron Mixture. *J. Pediat.* 49:46, 1956.
9. Quilligan, J. J.: Effect of a Cobalt-Iron Mixture on the Anemia of Prematurity. *Texas J. Med.* 50:294, 1954.
10. Wintrobe, M. M.: *Clinical Hematology*. Lee and Febiger, Philadelphia, 1952, p. 653.
11. Haehner, E., and Eisenreich, H.: Cobalt Therapy of Iron Refractory Anemia Following Gastric Resections. *Aertryl. Wchnschr.* 7:227, 1952.
12. Tevetoglu, F.: Geophagia (Dirt-Eating) as a Cause of Anemia in Children. In press.

**Acknowledgment:** The authors wish to express their appreciation to Misses Doris Oldham, Berta Villarreal and Alicia Fuentes for technical assistance rendered.

**P**ERFECT HEMOSTASIS is essential to primary wound healing. Tissue surfaces must lie in apposition for fibroblasts to bridge them before scar tissue welds them firmly together. Clots, serum, heavy ligature material, and massive clumps of ligature-strangulated tissue separate these surfaces and retard wound healing. Blood and serum must be absorbed, clots organized, and strangulated tissues autolyzed before surface apposition can be established and primary healing initiated.

—From *SURGICAL TECHNIGRAMS* by F. M. Al Akl, M.D.

At the annual meeting of The American Medical Association in 1957, the House of Delegates revised the Principles of Medical Ethics. It will be our purpose to discuss, separately, each of the Sections of these Principles in light of its ethical content and its relation to medical etiquette.

THE EDITOR

## Medical Ethics and Etiquette

*"Preamble—These principles are intended to aid physicians individually and collectively in maintaining a high level of ethical conduct. They are not laws, but standards by which a physician may determine the propriety of his conduct in his relationship with patients, with colleagues, with members of allied professions, and with the public."* . . . . .

PRINCIPLES OF MEDICAL ETHICS  
*J.A.M.A.* 164: 1484 (July 27), 1957

**I**t should be of interest to all discerning physicians to note in this latest revision of the "Principles of Medical Ethics", that again, ethics and etiquette have not been differentiated, and that as always in codes of medical ethics, the majority of the "Principles" deal with medical etiquette. As Chauncy D. Leake has so well pointed out in his book PERCIVAL'S MEDICAL ETHICS, (The William and Wilkins Co., Baltimore, 1927), "Medical etiquette is concerned with the conduct of phy-

sicians towards each other, and embodies the tenets of professional courtesy. Medical ethics should be concerned with ultimate consequences of the conduct of physicians toward their individual patients and toward society as a whole, and it should include a consideration of the will and motive behind this conduct." As Dr. Leake goes on to say, there is a lot of difference between professional courtesy and professional morality.

Furthermore, he seems to believe that in no code of so-called medical ethics has the conflict between two chief ethical positions "idealism which stresses the interests of humanity as a whole, and *hedonism* which emphasizes the interests of individual selves" been clearly recognized, nor has an attempt been made to develop a scheme of professional conduct consistent with any established theory of ethics; what we have done is to fall back on *hedonism* to erect internal standards of decorum to promote the financial welfare and dignity of the physician, and of the profession as a whole, while adopting an idealistic point of view relative to the

prevention and cure of disease in the patient or the community. These two positions in Dr. Leake's words "are difficult to compromise". However, despite the immediate conflicts which our idealistic and hedonistic attitudes may create, historically, the profession as a whole has furnished continuing evidence that its conduct has been primarily idealistic in nature, and only secondarily hedonistic. (After all doctors and their families have to eat). That which has happened in the prevention and specific cure of disease in the last hundred years or more, clearly supports this thesis.

As all graduates of American medical schools should know, the first codes of medical ethics were contained in those compilations which we call the "Oath of Hippocrates". Two ancient forms of the Oath have come down to us, the so-called "pagan" Oath in which matters concerned with medical etiquette take up two paragraphs, and the "christian" Oath in which there is but a single sentence. "But I will teach this art to those who require to learn it, without grudging and without an indenture" deals with medical etiquette. It should also be noted that the Oath indentures the physician who swears to it, and in ancient times such an indenture may well have decided which was a physician and which was a quack. No formal educational or legal qualifications for physicians existed in those times.

In the late Middle Ages and in Renaissance times, all great teachers of medicine stressed the Hippocratic principles of ethics in their writings, although at times, as always is likely to happen when codes are being enunciated, the definition of minutiae in deportment almost obliterated idealism. However, as Dr. Leake points out "it is

interesting that with the rapid development of medicine in the Renaissance, the better class of physicians and surgeons began, as a group, to impose penalties for violations of the traditions (of medicine) and to demand action by the civil authorities in the elimination of quackery. The Sixteenth Century *statuta moralia* of the Royal College of Physicians is an example of this development.

The transition from the broad principles of Greek medical ethics to the current complicated system was completed in the 18th Century. During this period the philosophical significance of law and order in nature, became generally appreciated. Men sought to establish similar, immutable, detailed and comprehensive laws for every phase of their activity. For medical etiquette, this tendency found expression in Thomas Percival (1740-1780), who formulated a code of ethics, not deliberately conceived in this way to be sure, but inevitably leading to such an attitude. With the object of specifically covering all possible contingencies, two results were certain to follow: a growing emphasis on letter instead of spirit, and a conflict in the multiplicity of ruler.

Thomas Percival was the son of a well-to-do Midlands family whose parents died when he was three years of age leaving him to be raised by an older sister. As a boy he attended a Unitarian Academy, and when twenty years of age entered upon the study of medicine at Edinburgh. He took his medical degree at Leyden in 1765, and surprisingly enough was elected a Fellow of the Royal Society in the year of his graduation. He went into practice in Manchester and soon developed a calm, consulting practice, the proceeds from which, together with a legacy he had received from a

physician-uncle, permitted him to follow his bent in thoughtful philosophical writing, and to pursue those social and public health activities which culminated in his efforts to improve the reporting of causes of death in Manchester, the development of a Board of Health in 1796, the construction of a contagious hospital, and the provision of free dispensary service for the poor.

One of the amazing things about Percival was that he was an assiduous correspondent, and regularly he was writing B. Franklin, Voltaire, J. Hunter, Withering, and many others. In Manchester, during this period, considerable intellectual ferment existed, and in 1781 the Manchester Literary and Philosophical Society was born under the aegis of Percival. Among the intellectuals in Manchester at this time, with whom Percival held close friendship were Charles White, the obstetrician and surgeon, whose paper on the infectiousness of puerperal fever anticipated those of Holmer and Semmelweis, and Thomas Henry, an apothecary, who conducted original studies on milk of magnesia and translated the works of Lavoisier into English.

Shortly after Percival had entered practice in Manchester, he wrote on the methods for the administration of hospitals, and a few years later a morallistic tome of children's stories. These two articles, together with the fact that he was in regular correspondence with philosophers of the time gave Percival a local reputation as a sound, thoughtful individual, and it is not surprising, that in 1791, when trouble arose internally in the Manchester Infirmary over staffing problems, that he its "physician extraordinary", was asked to draw up a "scheme of professional con-

duct relative to hospitals and other medical charities". What had happened in the Infirmary was that during a typhoid or typhus epidemic in 1789, its physical and staff resources had been taxed and the governors of the Infirmary decided to double its attending staff. The usual and well-known amour-propre which even to this day is possessed by staff physicians, was aroused, and feeling that this action of the governors was a reflection on their efforts, the original staff resigned. This, as can well be imagined, led to much confusion in the Infirmary, and as Percival had been able to maintain close personal relations with the leading opponents during all of the hub-bub, he was the logical man to try to bring order out of a chaotic situation. Percival's recommendations and "scheme" were ready for private distribution in 1794, and after much correspondence and consultation with men such as Erasmus, Darwin, White, Henry, Withering, Hiberdeen, and others, in its final form it was published under the title of a "Code Of Medical Ethics" in 1803. A year later Percival died.

The first edition of the "Ethics" with its "quaint blue-papered and white-backed board binding" is now a rare collectors item. Its chapters are entitled "Of Professional Conduct Relative to Hospital or Other Medical Charities", "Of Professional Conduct in Private, or General Practice", "Of The Conduct of Physicians to Apothecaries", and "Of Professional Duties on Certain Cases Which Require A Knowledge of Law". Two other chapters, "On The Powers, Privileges, Honors, and Emoluments Of The Faculty" and "On The Moral, Religious, and Political Character of Physicians," were started but never

completed by Percival.

The publication of "Code" brought about renewed appreciation by physicians in England and America relative to their moral obligations. Despite some opposition in England, the "Code" was quickly accepted by the better physicians and by medical societies. The adoption by the latter, gave it a quasi-legal position, because the societies could compel obedience through the threat of expulsion of an erring member.

In the United States, the problem of medical ethics and etiquette have been under consideration by physicians (most of the earliest ones being spiritual leaders as well) from early colonial times. Codes relating to fees were enacted in Massachusetts in 1649, and in Virginia in 1736, while in 1760 New York initiated the requirement, that those individuals who wished to become doctors, had to pass an examination before they would receive licenses to practice.

One must remember that prior to the founding of the Medical School of the University of Pennsylvania in 1765, most physicians in this country were the products of the apprentice system. Anyone wishing to become a physician, indentured himself for a period of time to an established practitioner and "read medicine". This system was very similar to that under which the apothecaries in England were trained. Relatively, few American physicians in colonial times had been able to go abroad to get the benefits of being educated in a University Medical School, nor did they hold a degree in Medicine.

It is not surprising that this lack of the opportunity to acquire an educational background in a University Medical School, resulted in many poorly qualified

physicians engaging in the practice of medicine in those early days. Quacks also flourished. This state of affairs began to alarm the colonial medical societies, which were being established in the latter half of the Eighteenth Century. These groups began to try to formulate general principles to govern the moral conduct of their members. Benjamin Rush, David Hosack, and the redoubtable Daniel Drake, all concerned themselves and wrote much on the subject of medical ethics.

With the rapid expansion of our population and territory in the early part of the Nineteenth Century, the medical profession increased greatly in numbers, and because educational facilities were totally inadequate, many medical men were either extremely bad doctors, or frank quacks. Under such conditions the ethics, etiquette and morale of the profession went from bad to worse. Dr. Samuel Brown, then at Transylvania University in Lexington, Kentucky tried to improve conditions by organizing the better class of physicians into a secret society named the "Kappa Lambda Society of Aesculapius". Its purpose was to promote the high ideals of medical practice based on Percival's "Code". However, this worthy effort quickly came to naught for, as Chauncey Leake says, "with the gradual acquisition of power, the Society came to grief . . . through the gross hedonism of its New York Chapter". It is interesting to note that this episode initiated a conflict in relation to medical ethics and etiquette between many physicians of New York, and other segments of the medical profession, which endured for almost seventy-five years. Hedonism, i. e. "interests of individual selves", which has long marked

certain segments of the profession, in New York appeared to be the major basis of this conflict.

The first medical society to adopt a "code of ethics" was the New York State Medical Society. In 1823, it adopted Percival's "Code" with very slight modification, and published it. This was followed in 1832 by "a System of Medical Ethics" which was adopted by the Medico-Chirurgical Faculty of Maryland. This "System" clearly acknowledged its debt to Percival. In the next few years a number of local medical societies adopted "Codes" also based on Percival's work, which by this time, in various editions, was in wide circulation in this country.

One of the major motivations of Dr. Nathan Smith Davis, in his efforts to organize the American Medical Association in 1846, was his desire to improve the professional qualifications and morality of physicians in this country. At the National Medical Convention which met in New York City in 1846, and which set the ball rolling for the organization of The American Medical Association in May, 1847, a resolution was introduced which set the pattern for our medical ethical concepts since that time. This resolution read: "... that it is expedient that the medical profession in the United States should be governed by the same code of ethics, and that a committee of seven be appointed to report a code for that purpose at a meeting to be held in Philadelphia on the first Wednesday of May, 1847." Three of the members of this committee were from Philadelphia, while the other four were from Delaware, Rhode Island, New York and Georgia. It would appear that the two strong men in this committee were

Doctors John Bell and Isaac Hays (Editor, American Journal of Medical Sciences) of Philadelphia, with the latter doing most of the work in the preparation of the committee's report.

When the report was rendered to the Association in May, 1847, Dr. Hays pointed out that the committee had studied many existing codes of ethics, and had found that they were based on a code of ethics enunciated by Dr. Thomas Percival. His phrases had been preserved in the committee's report because "language which had been so often examined and adopted must possess the greatest of merits for such a document as the present clearness and precision, and having no ambition for the honours of authorship, the Committee which prepared this code have followed a similar course and have carefully preserved the words of Percival wherever they convey the precepts it is wished to inculcate. A few of the sections are in the words of the late Dr. Rush, and one or two sentences are from other writers."

The importance of the adoption of this first "Code" cannot be overestimated because from 1847 on, local medical societies which wished to be represented in the House of Delegates of the American Medical Association had to ensure that their members would adhere to the "Code" of the Association. As was to be expected, the first "Code" was very detailed, an effort having been made to cover every facet of ethical conduct and profession decorum. Chapter I, Article II of this "Code," is devoted (of all things) to a dissertation on the "Obligations Of Patients To Physicians"! These "obligations" were as follows: 1. *Patients should realize how hard a doc-*

*tor's life is and "Should entertain a just sense of the duties which they owe to their medical attendants."* 2. *"The first duty of a patient is to select as his medical adviser one who has received a regular professional education."* 3. *"Patients should prefer a physician whose habits of life are regular, . . . should always apply for advice in what may appear to him to be trivial cases."* 4. *"Patients should faithfully and unreservedly communicate to their physicians the supposed causes of their diseases."* 5. *"A patient should not bore his physician, e.g. 'weary (him) with a tedious detail of events or matters not appertaining to his disease.'*" 6. *"The obedience of a patient to the prescriptions of his physician should be prompt and 'implicit.'*" 7. *"A patient should, if possible, avoid even the friendly visits of a physician who is not attending him."* 8. *"Patients should tell their doctors why they are dismissing them."* 9. *"Patients should always, when practicable send for their physicians in the morning . . . should also avoid calling on their medical advisers during hours devoted to meals or sleep . . . should be in readiness to receive the visits of their physicians."* 10. *"A patient should, after his recovery, entertain a just and enduring sense of the value of the services rendered to him by his physician; for these are of such a character, that no mere pecuniary acknowledgement can repay or cancel them."* As Chauncy Leake says, "Sweet conceit of the medical moralists of the 'Fabulous Forties' "!!

Within five years "ethical" difficulties faced the newly organized American Medical Association, when it was found that a member of the Connecticut Medical Society was practicing homeopathy,

i.e. an "exclusive dogma." The battle between "organized" medicine and the proponents of what have been called "exclusive dogmas" (homeopathy, osteopathy and chiropractic) has waxed and waned for more than a century. It was the basis for the long period of estrangement of many physicians in New York State from the American Medical Association. The "principle" that a physician could not *associate in any way* with a homeopathic physician (especially on consultations), irked many doctors in New York City. Early in 1882, the Medical Society of the State of New York adopted a simple, short code of ethics. At this time the Medical Society of New York adopted a resolution offered by Dr. D. B. St. John Roosa, a pioneer otolaryngologist "that the only ethical offense for which they (the medical profession) claim and promise to exercise the right of discipline, are those comprehended under the commission of acts unworthy a physician and a gentleman." *This, in fact is the pithy essence of the "code," even today.* Sometimes it appears too bad that the "principles" are not spelled out in this simple fashion! At the annual convention of the American Medical Association, in June 1882, the delegates from New York were not seated in the House of Delegates because of this action. Austin Flint, the president of the Association in 1883, attempted to get the New York State Society to re-adopt the "Code" of the Association. This move so annoyed the opponents of the Association's stand that they formed a "Society For The Prevention Of The Re-enactment In The State of New York of the Present Code of Ethics of The American Medical Association." This group became

very powerful and effectively split the medical profession in New York for many years. One group, the New York Medical Association, organized in 1884 hewed to the "Code" and was accepted as representative of the profession of New York by the A.M.A.

Ridiculous as this state of affairs may seem today, it persisted for twenty years, when at the annual meeting of the American Medical Association in 1903 a committee previously appointed brought in a compromise report on the "Principles of Medical Efforts" which was unanimously adopted. There is an interesting tale about this committee and its work. Dr. William H. Welch, then Professor of Pathology at Hopkins, was a member. The majority report of the committee displeased one member of it (Leake infers that this was Dr. Welch; Fishbein states that it was another member). Be that as it may, Dr. Welch "retired to his room, took off his coat and laying out the necessary number of long black cigars, went to work and wrote out in long hand the entire code. The committee got the code set in type and printed that night and a copy was on the desk of each delegate in the morning. As the delegates came to the meeting, Dr. Welch stood in the back of the hall greeting them and telling them how much better he thought the minority report of the committee was than the original majority report. According to Dr. William Sydney Thayer, it was this lobbying of Dr. Welch for his own handiwork that resulted in the eventual unanimous adoption of the report on the Principles of Ethics." (Fishbein, *A History of The American Medical Association*, pgs. 227-228, W. B. Saunders and Co., Philadelphia and London,

1947.) The "Principles of Ethics" (1903) represented a careful, less wordy, thoughtful re-write of the previous "principles" to which were added, an injunction to join local, state, and national medical societies, that a consultant can only prescribe in an emergency, and directives on free work, fees for certifying, minimal fee schedules, and fee splitting. The major deletions from the previous "code" were those parts dealing with "exclusive dogma" and the "obligations of the Patient to Physician." This action healed the breach which had existed between the profession in New York and the Association.

In 1912, another revision of the "Principles of Ethics" was prepared and accepted. The clause dealing with the presence of laity at operations was dropped out, and clauses dealing with exploitation of the professional qualifications of a physician by lay organizations, with changes in the conduct of consultations, with the social relations of physicians to other physicians' patients, with "contract" practice, and with the responsibilities of physicians in epidemics, and in the notification of disease, were added.

Shortly after World War II, the question of the need for a revision of the "Principles of Medical Ethics" was raised again in the Judicial Council and in the House of Delegates of the American Medical Association. After consideration and study of the problem, a revision of the "Principles" consist-

---

In this, and all succeeding articles on "Medical Ethics and Etiquette", credit is given to the great value of "The History of the American Medical Association", Morris Fishbein, W. B. Saunders and Company, Philadelphia and London, 1947, as a source book.

ing of a preamble and forty-seven sections was adopted in 1955.

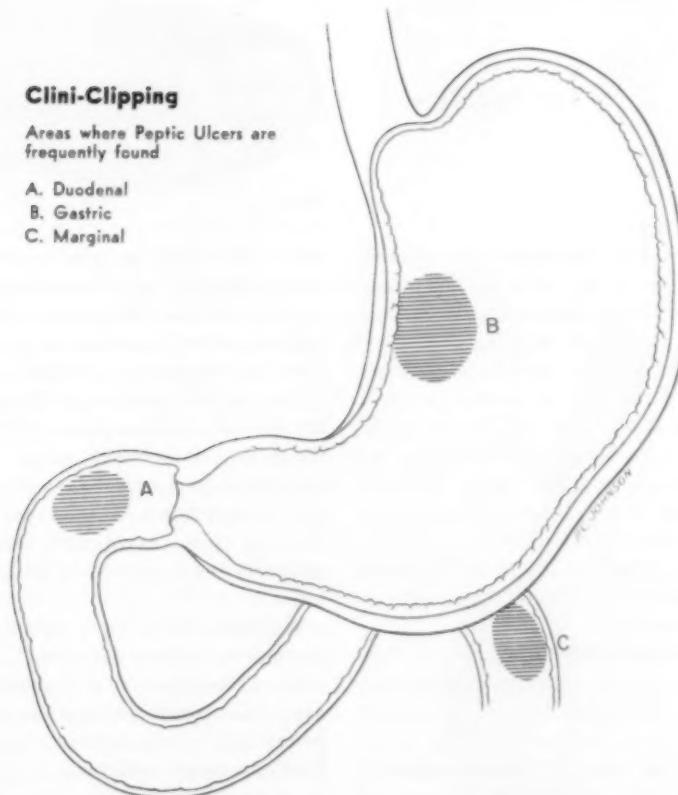
However, when continuing consideration was given to the "Principles" the Judicial Council came to the conclusion that without deleting basic ethical prin-

ciples, or traditional concepts, a much shorter version of the "Principles" could be devised. In 1957, a comprehensive, but brief revision of the code of ethics was presented to and approved by the House of Delegates.

### Clini-Clipping

Areas where Peptic Ulcers are frequently found

- A. Duodenal
- B. Gastric
- C. Marginal



## Subungual Lesions

The subungual area, consisting of the nailbed with its rich vascular network and abundant nerve endings, is one of the most sensitive portions of the finger and toe. Since they are easily observed through the natural window, the semi-transparent nail, lesions of the subungual area should always be, and often are, recognized early. However, treatment is not always as prompt as it should be. Therefore it seems worthwhile to consider a few of the diagnostic and therapeutic points regarding subungual lesions.

**Subungual Hematoma** A hard blow to the nail causes rupture of some of the thin-walled vessels, and a subungual hematoma results. This is extremely painful, due to pressure upon the delicate nerve endings which is exerted by blood trapped within the closed and rigid space. Examination reveals a collection of blood under the nail. Shortly

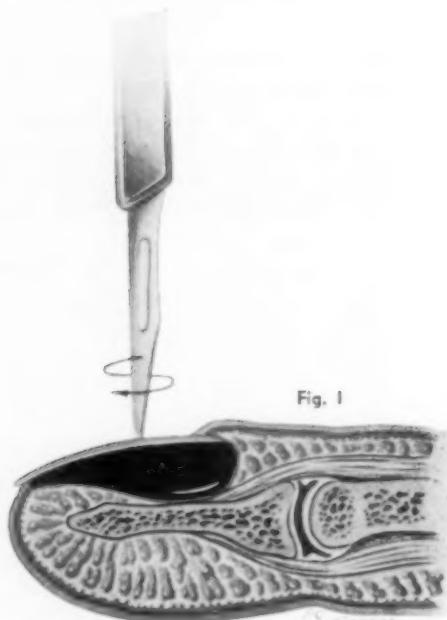


Fig. 1

after injury there is considerable pain and tenderness but if some time has elapsed between the injury and the physician's first examination, the tenderness may have largely subsided.

Two to four weeks may be required for the spontaneous absorption of the blood, and an occasional patient is seen who has forgotten the injury and shows only a small dark subungual spot, which must be differentiated from melanoma and other lesions which will be discussed below.

The treatment of an acute injury to the nail is prompt elevation, pressure, and cold compresses. If a painful subungual hematoma develops despite these precautions it should be evacuated. Careful aseptic technique is essential. The simplest technique of evacuation consists of drilling a hole in the nail with a sharp #11 scalpel if the hematoma is proximal (Figure 1), or excision

of a wedge of the nail with a scissors if the hematoma is at the tip. Anesthesia is usually unnecessary. The opening can be enlarged with a fine pointed scissors. If the bleeding has occurred at the edge of the nail, the blood can often be released by cutting carefully between the nail and the eponychium. A pressure dressing for three to four days will prevent recurrence. In old lesions the diagnosis should be assured before treatment is undertaken. Severe blows to the tip of the finger may result in fractures of the terminal phalanx. An X-ray is diagnostic. The nail may be lost if it has been badly contused. It is best to allow the nail be separate by itself. About three to six months are usually required for the complete regeneration of a nail.

**Glomus Tumor** The neuromyoarterial glomus is a complex little structure composed of a sympathetic nerve network, nontypical muscle fibers, and S-shaped blood vessels many of which are arteriovenous anastomoses. Its function is presumably the maintenance of constant capillary pressure and the control of peripheral temperature. Glomera are located in the fingers and toes, especially in the subungual and eponychial areas, and in many other regions of the hands, feet, and trunk.

Occasionally a glomus undergoes hypertrophy, idiopathically or as a result of trauma. The hypertrophied glomus, or "glomus tumor", presents as a small, round, blue or purple nodule which is exquisitely tender and from which paroxysms of pain radiate up the arm. These paroxysms are precipitated by pressure, trauma, and changes in temperature. There is usually excessive sweating of the extremity. The commonest sites of the tumor are the sub-

ungual and eponychial areas. (Figure 2). It must be differentiated from subungual melanoma and hematoma.

Treatment is excision, which can be done under local or ring-block anesthesia, but is generally best performed under general anesthesia and a tourniquet. The entire nail over the lesion



Fig. 2



Fig. 3

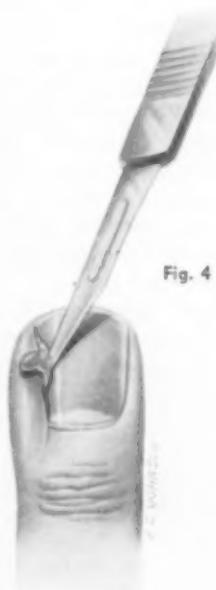


Fig. 4



Fig. 5



Fig. 6

must be removed to afford a good exposure. If the nailbed must be excised a split thickness skin graft or a cross-finger flap may be required for closure of the wound. Recurrence should not occur if the entire lesion is removed.

**Subungual Melanoma ("Melanotic Whitlow")** Malignant melanomas are highly malignant, but relatively uncommon tumors. Approximately 3% of them arise on the tips of the fingers and toes adjacent to or under the nails. The thumb and great toe are the most common sites. They may develop from benign nevi or arise "de novo." In about 50% of cases there is a history of trauma, but what role this plays in the pathogenesis is not clear.

The clinical appearance is a black, fungating, usually well-demarcated, often ulcerated tumor, which elevates and later destroys the nail. (Figure 3). Even in the "amelanotic" variety, there is characteristically a coal-black margin around the ulcer and the lesion exudes a thin fluid which stains the dressing dark brown. There is usually minimal pain or discomfort. In the differential diagnosis, paronychia, pyogenic granu-

loma, osteomyelitis, subungual osteochondroma and hematoma must be considered.

It is the consensus of most authorities on the subject that treatment should consist of amputation of the involved digit, followed by regional (axillary or femoral) lymph node dissection, two weeks later if there is lymphadenopathy, or six weeks later if the nodes are not clinically involved. Amputation is to be avoided, however, in the absence of a positive histologic diagnosis. This can be obtained by wide excision of the lesion (*not* an incisional biopsy). The wound can be temporarily covered with a split thickness skin graft until the diagnosis is established. If it is melanoma, the amputation is carried out promptly.

The prognosis of subungual melanoma is on the whole better than that of melanoma originating in any other region. Upwards of 25% five year survivals are reported.

The best treatment is prevention if possible. The mere presence of a nevus on the hand or foot is ample reason for its wide excision, since almost all

nevi in these locations are junctional in type, and therefore the kind most likely to undergo malignant degeneration. And indeed, the sudden appearance of, or change in size, color, appearance, or consistency of or the constant irritation or ulceration of any nevus on any part of the body makes urgent excision and histologic examination mandatory. Radiotherapy, electrodesiccation curettage, or *incisional* biopsy of any nevus is absolutely contra-indicated.

**Paronychia** The simplest infection of the finger is the paronychia which develops at the side of the nail, often in a break in the skin resulting from a hang-nail. It may progress into an extensive cellulitis with subungual and/or proximal extension. There is pain, swelling, and redness alongside the nail. Treatment consists of warm saline soaks until the lesion becomes fluctuant, when it can be drained without anesthesia by incising the edge of the cuticle and trimming the overhanging skin. (Figure 4) Culture usually reveals *Staphylococcus aureus*, which may be a secondary contaminant of a chronic ringworm. If the lesion is subungual, soaks and the removal of a segment of the nail (usually the base) to allow drainage are usually all that is necessary. In the case of a chronic paronychia with thickening of the nail (onychogryphosis) excision of the nail and nailbed is the treatment of choice. Radiotherapy should be avoided.

**Subungual Wart** A wart (*verruca*) is a benign tumor of viral origin which frequently occurs on the fingers and toes of both children and adults. There may be multiple lesions beside and under the nails. If the diagnosis is certain, electrodesiccation of multiple le-

sions is permissible, but surgical excision and histologic examination are preferable. Removal of part or all of the nail is required for the successful removal of subungual warts.

**Granuloma Pyogenicum** Granuloma pyogenicum is a semi-firm, well-demarcated, red, shiny mass of granulation tissue which frequently develops at the site of trauma and low-grade infection on the finger tips. (Figure 5) It may be confused with melanotic whitlow, but it is not pigmented and is more sharply demarcated than melanoma. The treatment of choice is excision followed by warm saline soaks.

**Subungual Foreign Body** Subungual splinters of wood, glass, steel wool, etc., cause exquisite tenderness, pain, and often small abscesses. Often the end of the splinter has been broken off by the time the patient is seen by the physician. Removal is best accomplished after a wedge of nail over the foreign body has been removed to afford a good exposure. (Figure 6).

**Other Subungual Lesions** Papillomas of the nail-bed present as small firm swellings which produce pain as the result of elevation of the nail. The treatment is surgical excision.

Exostosis and osteochondroma of the terminal phalanx, especially of a toe, also cause pressure on the nail-bed, elevation of the nail, and pain. A roentgenogram is diagnostic. Treatment is surgical excision of the nail and the underlying tumor. A free skin graft or pedicle flap from an adjacent digit may be required for closure.

Osteomyelitis of the terminal phalanx is treated by wide exposure (saucerization), and antibiotics. Amputation of the involved phalanx may be necessary.



## Obstetrics, Gynecology and the Law

GEORGE ALEXANDER FRIEDMAN, M.D., LL.B., LL.M.  
New York, New York

**A** large number of lawsuits are brought against physicians specializing in obstetrics and gynecology. This is perhaps so since in pregnancy and childbirth cases particularly there is a considerable likelihood of some unfortunate results, even with the best of care. Many of the cases are concerned therefore with the issue of proximate cause, that is, with the necessity of proving clearly that the injuries resulted from the medical treatment and not as a natural consequence of the patient's condition or from some other cause.

Some other significant cases which have arisen in this field and which will be discussed in this article are those involving diagnosis, use of unsterile instruments, failure of attendance, post-operative treatment, injury to infant, rights of unborn children, abortion,

damages, liability of hospitals and statute of limitations.

**Proximate Cause** Some of the more frequent malpractice cases arising from negligence in pregnancy or childbirth treatments which have centered upon the issue of proximate cause are those in which plaintiffs allege failure of attendance, development of infection, failure to remove placenta or other injuries to the mother or child.

Most cases in which plaintiffs have relied upon the physician's failure to give prompt and proper attendance and care are unsuccessful. A case in point occurred in Kentucky in 1941. In that case the mother had eclampsia and died shortly after delivery of the child. When the physician first arrived he knew she was in critical condition due to convulsions which she was then suffering. He

administered morphine hypodermically, and then 2 c.c.'s of magnesium sulphate intramuscularly when the convulsion repeated. He called in a consultant, and in the course of 2½ hours the doctors delivered the baby with forceps, meanwhile administering chloroform to the patient to prevent recurrence of the convulsions. After the delivery ½ c.c. pituitary was given to control bleeding and regulate contraction of the uterus.

The physicians remained an additional 45 minutes and then departed. The mother died shortly thereafter. The physician was not held liable. The consultant testified that the patient died of toxic poisoning, that a heart stimulant was administered before they departed which could not be repeated within three or four hours and that nothing more could have been done had they remained. The plaintiff failed to establish that the physician's actions in leaving patient had in any way contributed to her death.<sup>1</sup>

The difficulty of tracing the cause and source of an infection dooms to failure, similarly, most cases in which plaintiff alleges her infected condition was the result of defendant's negligence. A 1929 Alabama case is in point: Plaintiff claimed she suffered from blood poisoning as a result of defendant physician's failure to wear gloves in packing plaintiff's vagina after a miscarriage. Defendant claimed the blood poisoning existed prior to the miscarriage. Defendant brought out that plaintiff had been sick almost a week before he was called, had taken douches and treated herself despite her knowledge gained from two prior miscarriages of their attendant needs, difficulties, pains and dangers. The court held that no causal connection between the alleged negligence and injury was

proved. It said:

"Proof which goes no further than to show that the injury could have occurred in the way alleged does not warrant the conclusion that it did so occur, when the proof of injury can with equal probability, be attributed to some other cause."<sup>2</sup>

*Anderson v. Stump*, however, was, to the jury, a clear case of negligence plus proximate cause. Defendant physician testified that the patient, a pregnant woman, was peculiarly susceptible to infection at the time when he examined her. He further testified that he did not know whether the glove he used in the examination had been sterilized or not, since he got it from the nurse. Plaintiff testified that the examination was made by the doctor in his street clothes and without a glove. The jury concluded that the infection which subsequently developed in plaintiff's vagina was the result of defendant's lack of care.<sup>3</sup>

Those cases in which plaintiff claimed that defendant's failure to insure that all the placenta had been expelled from the womb after childbirth resulted in infection are similarly difficult to prove. Defendant physician delivered plaintiff of a child but failed to remove a part of the placenta from her uterus after the birth. Plaintiff subsequently developed septicemia. At the trial another physician who treated plaintiff after delivery testified that defendant's failure to remove part of the placenta might have caused the infection. He further testified, however, that plaintiff was suffering from pyorrhea and that she was in a rundown and weakened condition. Septicemia might have been caused by pyorrhea or latent germs in the genital tract during her weakened condition.



*Held:* For the defendant. There was no degree of certainty whatever that any negligence of the defendant caused her sickness.<sup>4</sup>

It is most often a question for the jury whether the act or omission of the physician was the cause of the injury sustained. Defendant admitted to plaintiff that the burns she suffered following childbirth were due to negligence in the delivery room in that she had been overexposed to a disinfectant solution which had been applied to her prior to the delivery of her child. At the trial, experts testified that the burns were due to friction and pressure or to a combination of shock and pressure, to the fact of labor debilitating the burned area than other areas of the body, and possible but unlikely augmentation of the foregoing reasons by the treating of the burned area with Scott's solution used as a disinfectant.

*Held:* It was for the jury to decide the cause of the burns.<sup>5</sup> While expert testimony is essential, it cannot usurp the function of the jury.

**Diagnosis** An incorrect diagnosis does not by itself prove negligence. The

patient must show that the physician failed to exercise average skill and learning, and use ordinary care in his treatment and that this failure was directly responsible for the injury complained of.

A 40-year old patient exhibited the conventional symptoms of early pregnancy—cessation of menstruation, excessive vomiting, etc. The two physicians whom she consulted suspected either menopause or pregnancy. At the end of the three-month period the patient visited the defendant-physician, told him she had visited another physician, and asked whether she was pregnant. He did not inquire about the diagnosis of the other physician, but insisted upon an x-ray and operation for gall bladder trouble. As soon as the surgeon made his incision he discovered that the patient was pregnant and that the gall bladder was affected no more than is usual in cases of pregnancy. The patient recovered from the operation and was delivered of a normal baby at the end of the usual period of gestation. The court held that these facts were enough to submit to the jury to decide whether the physician used due care and diligence in making his diagnosis and in the treatment that followed.<sup>6</sup>

In another case, the patient sued the physician for failing to discover that she was pregnant during the operation for the removal of a tumor of the cervix and during his post-operative treatment. She later gave birth to a dead baby and claimed at the trial that it was killed by the physician's probing with a metal instrument during the post-operative treatment. The court held that there was no evidence as to how the child died. As for the failure to diagnose the pregnancy, the court said:

". . . It does not appear that if he had known the fact, his treatment of her would have been different from what it was. It was necessary . . . to remove the tumor, whether the respondent was pregnant or not; and that the [physician] performed the operation skillfully and successfully the evidence shows beyond any question."<sup>7</sup>

A specialist is entitled to rely on the diagnosis of another physician and treat patient accordingly without making an independent examination and diagnosis. Plaintiff's family physician diagnosed her case as tumor. He thereupon took her to defendant, an X-ray specialist, for treatment. While defendant gave plaintiff a slight examination by feeling the abdomen which tended to confirm the family physician's diagnosis, he relied primarily on the diagnosis of the family physician. The court held this was a proper reliance, particularly in the absence of anything warranting a contrary conclusion.<sup>8</sup>

**Post-operative Treatment** The physician's duty to the patient does not end after delivery. He must be available or provide a substitute to treat any post-partum complications that may arise.<sup>9</sup> Thus, the physician may have to treat an infected breast,<sup>10</sup> or remove placental fragments.<sup>11</sup>

Defendants performed the operation of conization of the cervix upon plaintiff. They then inserted gauze for a period after the operation, removed it and took no other action. The cervix grew together necessitating additional treatment and ultimately the removal of plaintiff's uterus.

Held: defendants failed to follow good medical practice in taking steps to insure that the uterus remained open.<sup>12</sup>

Plaintiff, an unmarried woman, was three months pregnant. When she went to defendant for treatment, she was apparently very ill and in great pain. Defendant brought her to a hospital where he told the authorities he believed she had a miscarriage. The hospital was unable to receive her, but defendant was advised to go to another hospital. Instead he returned with plaintiff to his office, stayed there with her a few hours, administering no treatment save to give her a little water. When she became unconscious, he felt nothing could be done for her so he left her there and went home. When he returned the next morning, he found her dead. A post-mortem disclosed that the cause of her death was peritonitis, hemorrhage and shock brought about by a rupture of her uterus. The rupture was due to instrumental interference with pregnancy.

The court said that whether or not defendant had performed the operation on her, he was guilty of the grossest negligence in the care given and the jury was well justified in finding that her death resulted as a consequence of his negligence. She had sought professional treatment from him immediately after the operation and remained in his care thereafter until her death. It was his duty to take all necessary steps to alleviate her suffering and if possible cure her condition. The post-operative care in this case became his duty even if he did not perform the operation.<sup>13</sup>

**Abortion** There is a sharp conflict of authority on the question whether the consent of a woman to an abortion precludes a recovery. In those cases where recovery is denied, the reasoning of the courts is generally based upon the premise that the woman was either an accomplice in the crime of abortion, or

a willing participant therein. Having taken part in an illegal and immoral transaction, she is barred from maintaining an action arising from such transaction.

In *Nash v. Meyer*, a 1934 Idaho case, a husband and wife brought an action based on the negligence of defendant physician who performed an abortion on the wife. The court held that the consent of the plaintiffs would preclude recovery from the defendant since they were participants in an illegal transaction.<sup>14</sup>

The case of *Milliken v. Hedesheimer* is typical of those jurisdictions which permit recovery. In that case a woman died as a result of an abortion operation. The administrator of her estate was permitted to recover damages from the physician who performed the illegal operation. The court held that the consent of the person injured by an unlawful act will not preclude recovery where such act involves a violation of the public peace or the life of the person involved.<sup>15</sup>

Other cases point out that in those jurisdictions where recovery of damages is precluded by consent, that consent must be real and valid and not induced by fraud or deceit.<sup>16</sup>

Curiously enough, it has been held that the abandonment of a woman who has undergone an illegal abortion with the knowledge that she is seriously ill as a result of such operation gives rise to a cause of action notwithstanding the consent of the woman to the operation.<sup>17</sup>

**Rights of Unborn Children** Until recently, the overwhelming number of states did not allow a child or his next-of-kin to sue a physician for prenatal injuries to the child. The trend has been away from that position so that to-

day the states are about evenly divided on it. In fact, two states, Minnesota in 1949 and Mississippi in 1954, have gone even further by allowing a suit to be maintained on behalf of child that died before birth for prenatal injuries inflicted after it reaches the age where separation from its mother will not mean the end of its life also.<sup>18</sup>

One court explained this rationale thus:

"By the negligence or the wilful misconduct of someone, an unborn child has to go through life crippled, blind, subject to fits, an imbecile, or otherwise changed from a normal human being. Yet the law provides no means for compensation for such a situation. It is no wonder so many judges have dissented from such decisions (referring to decisions denying recovery) and that some of the latest cases have disregarded them altogether."<sup>19</sup>

**Injury to Child** The physician has the same duty of care toward the infant he delivers as to the mother. One of the acts of negligence most frequently alleged has been failure to avoid eye infection by treatment with silver nitrate solution, a practice required by statute in most states. There appears to be almost a presumption that eye infections following such a failure is attributable thereto.<sup>20</sup>

**Liability of Hospitals** A private hospital has the duty to give a patient such reasonable care and attention as his known condition requires. The duty is measured by the degree of care, skill and diligence customarily exercised by hospitals in the community, or by its agreement with the patient. A patient enters a maternity hospital, not only to receive

constant nursing care, but also the service of a doctor, when required, during the absence of her private physician.

A hospital that failed to live up to this responsibility recently had to pay an injured child \$55,000 and its father \$2,000. The child developed an intracranial hemorrhage while being born prematurely and, as a result, is a spastic, 90% deficient and incurable. The mother, who was in her seventh month, suffered a rupture of the uterine membranes and was sent to the hospital by her private physician. In the early afternoon shortly after her admission she began having intermittent contractions, which continued with increasing frequency. The resident physician gave her a rectal examination at 7:30 P.M., felt the contractions at 9:30 P.M. and then said she had nothing to worry about. Because of the patient's pain, the nurse called the resident three times between 10:15 and 11:00 P.M., but he refused to come because he was preparing to deliver triplets.

Shortly after 11:00 P.M. the baby's head protruded from the vagina. The nurse hurriedly brought the delivery cart, and the patient transferred herself without assistance from the bed to the cart, and in the delivery room, from the cart to the delivery table. As soon as she settled on the table, the baby was born unaided. There was a thud as the baby's head hit the table. A private physician who was passing by was summoned by the nurse to cut the cord.

The evidence supporting the jury's finding of negligence against the hospital was as follows: (1) the failure to call the private physician; if he or the resident were available, the baby's head would have been guided out and not hit the table; (2) the resident's failure to

ascertain that the patient was in true labor; his failure to respond to the nurse's repeated calls; (3) the failure of the nurse to call the private physician after being unable to get the resident; (4) failure of the delivery room nurses to assist the patient from the delivery cart to the table and to be at her side when she delivered. In addition, an expert testified that the patient should have been given hykinone during labor, that Seconal and Demerol should have been omitted, and that an episiotomy should have been done if the perineum was tight.<sup>22</sup>

It is the duty of the hospital to take reasonable precautions against a patient injuring herself while in labor. A patient, suffering from intrapartum psychosis, leaped to her death from the labor room when the nurse stepped outside to answer the telephone. The jury was allowed to find the hospital negligent in failing to provide guard rails or locks on the windows and in failing to provide constant supervision.<sup>23</sup>



In a 1944 New York case parents were first told that they had a girl. A few days later they were told the child was a boy. The parents sued the hospital "for severe physical and mental anguish, feeling that the child given to them is not their own." But the parents at no time "realized that the child given to them was not the one they wanted." The court refused to allow the action since in New York there is no recovery in a negligence action for mental suffering in the absence of accompanying physical injury.<sup>24</sup>

**Statute of Limitations** Plaintiff was delivered of a child on March 27, 1927. Defendant visited her at home on March 22d and again April 4, 1927, in connection with complications arising after the birth. A malpractice suit was commenced April 3, 1929. The court held that the suit was brought within the two year Statute of Limitations. The defendant was employed for the delivery of the child and the necessary attention following. The statute does not run while the treatment continues.<sup>25</sup>

**Damages** Plaintiff complained of backaches to physician defendant who diagnosed the cause as a tipped uterus. In fact, plaintiff was pregnant. Defendant's treatment resulted in an abortion and impairment of the nervous system. Plaintiff was awarded \$5,000 damages.<sup>26</sup>

Physician defendant failed to attend and treat pregnant patient who had a miscarriage which would have occurred in any event. The court held the plaintiff was entitled to recover in damages for any and all pains of childbirth and following it that were not prevented or eased by physician because of his negligent failure to attend or prescribe for his patient. The court pointed out that had the doctor attended, the child would have been born in bed; he would have prescribed narcotics to relieve the pain; the plaintiff would have had the assuring presence of a doctor; other medical care would have been taken. The court also allowed recovery for present mental suffering due to the immediate realization of what is occurring.<sup>27</sup>

### Summary

1. *One of the essential facts plaintiff must prove to win judgment in a law suit is proximate cause; that is, plaintiff must prove clearly that the injuries resulted from the act of the defendant and not from some other cause.*

2. *In malpractice cases in the field of obstetrics and gynecology it is often difficult for plaintiff to prove that the injuries resulted from medical treatment and not as a natural consequence of the plaintiff's condition or from some other cause.*

3. *This is particularly true in proof*

*of issues of development of infection and failure of attendance.*

4. *Although experts are essential to the proof of medical facts, the question whether the act or omission of the physician was the cause of the injury sustained is usually a question for the jury. The court cannot permit an expert's testimony to usurp the function of a jury.*

5. *Incorrect diagnosis alone is insufficient to prove malpractice; malpractice results from failure to use average skill and care.*

6. *A specialist in his treatment of a*

patient is entitled to rely on the diagnosis of another physician.

7. The duty of the physician does not end with an operation. It extends to post-operative care.

8. Authorities are divided on the question of whether consent to an abortion precludes a malpractice action based on that abortion.

9. Two states recently allowed malpractice suits for prenatal injuries on behalf of unborn babies who died before birth.

10. The physician has the same

duty of care toward the infant he delivers as to the mother.

11. A private hospital must give the maternity patient nursing care and the services of a doctor in the absence of her private physician. It must also take reasonable precaution against a patient injuring herself during labor, or after delivery.

12. Treatment does not end with delivery of a child. It continues also for the necessary attention which follows birth. The Statute of Limitations does not run while the treatment continues.

### Bibliography

1. Williams v. Tarter 286 Ky. 717, 151 SW2d, 783, 12 NCCA NS554 (1941).
2. McKinnon v. Polk 219 Ala. 167, 121 SO.539, 542.
3. 42 Cal. App. 2d, 761, 109 P.2d, 1027, 12 N.C.C.A. NS 578 (1941).
4. Hammer v. Klegger 50 S.D.453, 210 NW 667 (1926).
5. Werenka v. Sewall 320 Mass. 362, 69 NE 2d, 581 (1946).
6. Paulson v. Stocker 4 NE 2d 629 (Ohio, 1935).
7. Langford v. Jones 22 P 1064 (Or. 1890).
8. Pilgram v. Landham, et al. 63 Ga. App. 451, 11 SE 2d 420 (1940).
9. Wilson v. Martin Memorial Hospital, Inc. et al. 61 S.E. 2d 102 (N. C.).
10. Hirsch v. Hay 18 C.C.H. Neg. cases 902 (Tenn.).
11. Waynick v. Jones 18 C.C.H. Neg. cases 102 (Tenn.).
12. Kirchner v. Dorsey & Dorsey 226 Iowa 283, 284 NW 171 (1939).
13. Stejskal v. Darrow 55 N.D. 606, 215 N.W. 83, 52 A.L.R. 1096 (1927).
14. 54 Idaho, 283, 31 P 2d 273.
15. 110 Ohio St. 38, 144 N.E. 264, 33 A.L.R. 53 (1924).
16. Gunder v. Tibbets 153 Ind. 591, 55 NE 762 (1899).
17. Androws v. Coulter 163 Wash. 429, 1 P 2d, 320 (1931); True v. Alder 227 Minn. 154, 34 N.W. 2d 700 (1948).
18. Verkennes v. Cornieu 38 NW 2d 838 (Minn. 1949); Rainey v. Horn 72 So. 2d 434 (Miss. 1954).
19. Damasiewicz v. Gorsuch 79 A 2d 550 (Md., 1951).
20. Walden v. Jones 289 Ky. 395, 158 SW 2d 609, 141 A.L.R. 105, 12 N.C.C.A. NS 599 (1942).
21. Garfield Memorial Hospital v. Marshall 92 App. D. C. 234, 204 F 2d 721, 37 A.L.R. 2d, 1270 (1953).
23. Santos v. Unity Hospital 301 NY 153, 93 N.E. 2d, 574 (1950).
24. Kaufman v. Israel Zion Hospital 183 Misc. 714, 51 N.Y.S. 2d 412 (1944).
25. Bush v. Cress 178 Minn. 482, 227 N.W. 432 (1929).
26. Dennis v. McArthur 23 Wash. 2d 33, 158 P 2d 644 (1945).
27. Mehigan v. Skeehan 94 NH 274, 51 A 2d 632 (1947).

133 E. 58th Street

*The clinical arm of the University of Chicago Medical School provides 711 beds in its various hospital facilities and records 200,000 outpatient visits annually. Its laboratories are unusually extensive, while its libraries provide over two million volumes.*

## UNIVERSITY



Main entrance of the  
Albert Merritt Bill-  
ings Hospital of the  
University of Chica-  
go Clinics.

## OF CHICAGO CLINICS

When the University of Chicago added clinics and clinical departments to its pre-clinical instruction in 1927 it took advantage of the opportunity to institute new ideas of medical education. (Many years ago, Dr. Abraham Flexner observed that major changes rarely occur except when a school is completely reorganized or when it is first established.)

The new ideas, in the opinion of the Clinics' administrators and staff, have been thoroughly tested and proven in the three decades since their adoption.

The aim of the University of Chicago Medical School was established by a committee of the University Senate, appointed in 1923, which decided that the school not only would train practitioners but should advance medical knowledge by promoting research and training investigators in the medical sciences. The committee also took note of the strategic position of Chicago and its

probable influence on medical development throughout the middle west and the south.

**Full time system** The staff and administrative officers of the University believe that the most effective organization to carry out the purposes of the clinics and medical school is the full time system. All members of the clinical staff are appointed on a full time basis. Salaries of staff members are paid by the University and are determined by academic competence, professional qualifications and investigative ability.

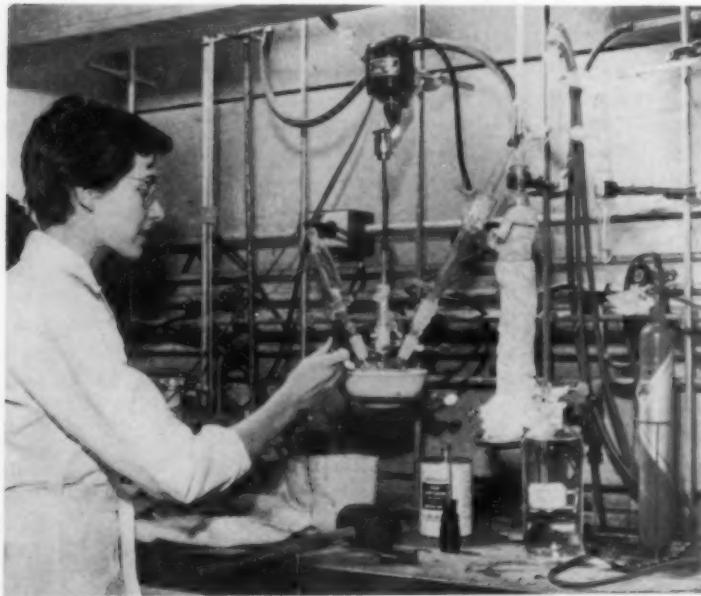
Members of the staff render service to paying and nonpaying patients both in the hospital and in the outpatient clinics.

"Historically," reports a Clinics administrator, "it has been shown that the full time plan relieves the staff member of the need for earning an income by treating private patients not related

The University of Chicago Clinics buildings are at left in the University group.



An important part of the work of the Chicago Clinics is carried on in its laboratories which provide extensive facilities for special research projects.





either to teaching or research. Thus, the faculty member is left free for the main task of teaching, training assistants and caring for patients. In addition, the faculty member has a greater amount of time for both clinical and laboratory research."

The benefits of the full time plan have been so convincingly demonstrated at the University of Chicago Clinics that few, if any, staff members would desire to change the plan.

**Education** The clinical and non-clinical areas are grouped in the Division of Biological Sciences. This arrangement, which is credited by the staff with the effective program of advancement of medical knowledge, brings anatomy, zoology, biochemistry, microbiology, pharmacology, physiology and pathology into working partnership with the clinics.

**Emphasis on research** Much emphasis is placed on research at the University of Chicago Clinics, beginning with the students and increasing with graduates, residents and staff members. The clinical departments require that residents spend a certain amount of time in the laboratory.

**Hospitals** The following clinical facilities are available to staff doctors at

the University of Chicago Clinics:

*Albert Merritt Billings Hospital*, as an administrative unit, has 465 beds intended for the use of the Departments of Medicine and Surgery. The adult outpatient clinic for medicine and surgery, under the same roof, provides care for several hundred ambulatory cases daily. The laboratories of the Departments of Medicine and Surgery are in close physical connection with the hospital.

*Bobs Roberts Memorial Hospital for Children* is immediately adjacent to Billings Hospital. It has 60 beds and a large outpatient department. The Department of Pediatrics has its laboratories on the ground and fifth floors of the building and centers its activities in it.

The *Home for Destitute Crippled Children* adjoins Billings Hospital and has 34 beds for the care of crippled children. The Section of Orthopedic Surgery of the Department of Surgery is in charge of the professional services. It is provided with research laboratories.

*Chicago Lying-In Hospital and Dispensary* has 152 beds and 110 bassinets. It occupies a block immediately west and across the street from the main medical complex. Student laboratories, classrooms and research laboratories have been incorporated in Lying-In Hospital.

A three-story unit connecting Lying-In Hospital and Billings Hospital is being planned. It will have admitting and administrative facilities, laboratories for the outpatient department including an exfoliative cytology cancer diagnostic unit and more space for the psychiatric department.

The total bed capacity of the Univer-

sity of Chicago Clinics is 711. In addition, there are about 200,000 outpatients annually.

**Laboratories** Laboratory facilities for all departments and sections are unusually extensive and complete. They afford facilities for teaching and for employment of methods used in the investigation of diseases, including those methods common to medicine and to biology, physiology and chemistry. One group of laboratories is devoted especially to work involving the application of radioactive substances to biological problems.

**Libraries** The Bio-Medical Libraries at the University of Chicago contain 128,000 volumes. They receive about 1,200 periodicals. This literature is distributed as follows:

Medical Library (Pathology Building). The Frank Billings Medical Library is devoted to current clinical literature. In addition to a basic collection of clinical works, its 18,000 volumes include the monographs and journals dealing with clinical medicine published since 1942. It also contains complete files of reference works, literature, indexes and abstract journals.

The Medical Library also includes the Dr. Morris Fishbein Reading Room, named after the noted author of medical books, lecturer and for many years editor of the *Journal of the A.M.A.* The fund supporting this room was begun by Mrs. Fishbein.

Biology Library (Culver Hall). The Biology Library contains books and complete files of journals dealing with general biology, agriculture, anatomy, biochemistry, biophysics, botany, microbiology, physiology, radiobiology, veterinary science and zoology. It also contains books and journals dealing



with the medical sciences published prior to 1942. Total holdings of this library number 110,000 volumes.

The University of Chicago Library, which embraces the main service unit (Harper Memorial Library) and twenty-four departmental libraries and reading rooms, has a book collection of approximately 1,900,000 volumes. It receives regularly about 53,000 continuations, including the transactions and proceedings of learned societies and more than 6,000 periodicals.

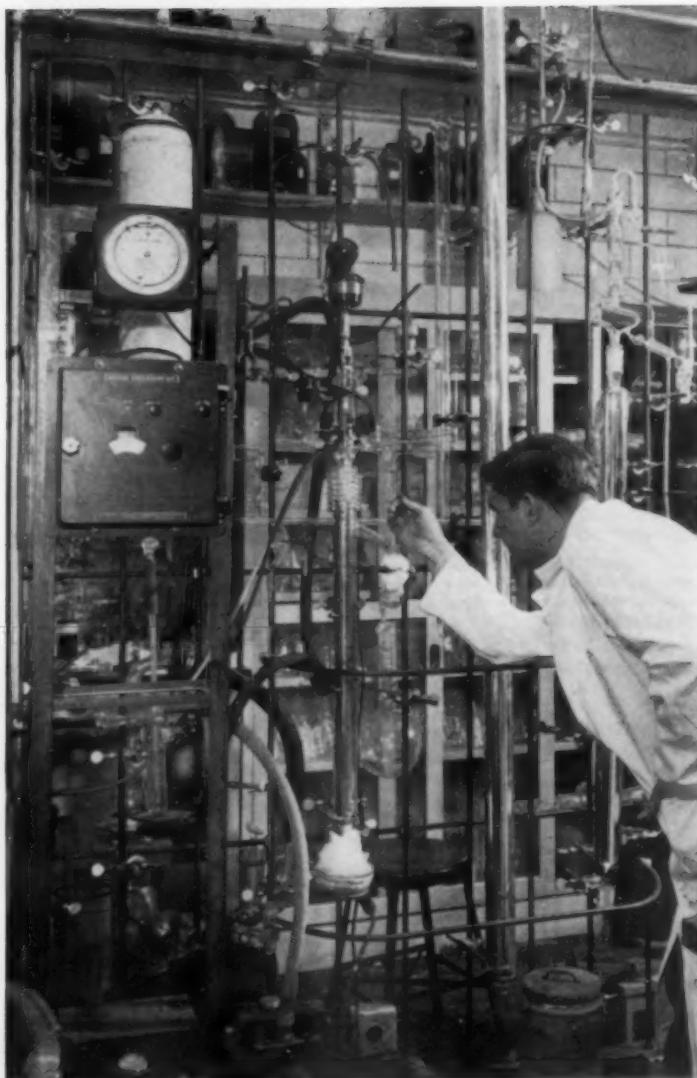
In addition to these collections, students and faculty have access to the resources of the Midwest Inter-Library Center, a cooperative library which stores and services less-used research materials deposited by 15 member universities and John Crerar Library.



Above, Billings Hospital provides facilities for adult outpatient care as well as 465 beds for medical and surgical patients.

Below is a rendering of the proposed resident-intern apartment building scheduled for completion by July 1958.







Above, doctors' dining room at Chicago Clinics is decorated with photo murals of other leading medical centers.

**Religious facilities** Religious services for patients are held each Sunday in the University of Chicago Clinics. The chaplain's department works in

close relationship with Protestant, Roman Catholic and Jewish clergymen and they are encouraged to call on patients of their faith.

---

### AN EXERCISE IN DIAGNOSIS— THE CASE REPORTS

**I**N addition to our regular quota of original articles, "Refresher" articles and departments, this issue, and every issue, contains selected Case Reports. You will find them on pages 54-56. We recommend these studies as interesting and stimulating.

SPECIAL REPORT ON BLUE CROSS PLANS

BY JAMES E. BRYAN

## Hospital Care Paid In Advance

*From a handful of Texas schoolteachers who paid three cents a day for coverage, Blue Cross membership now totals nearly 55 million persons in the U.S. and Canada. Inevitably, such things as inflation, increased hospital services and broader benefits have combined to up the ante. For thirty years, Blue Cross has solved problems as they have arisen. Current questions concern diagnostic admissions, over-utilization, care of the aged, and "major medical" coverage. These questions, too, will find answers under this unique, voluntary system of hospital bill prepayment.*

**T**wenty-eight years ago, an idea took root in Dallas, Texas. It was a brand new idea, and it saved our voluntary hospital system from almost certain bankruptcy.

More important in the long run, perhaps, is the fact that the development of this idea has brought modern hospital service within easy reach of millions of people who previously lived in constant fear of *personal* bankruptcy due to an unexpected serious illness.

Blue Cross, now a nation-wide household symbol for pre-paid hospital care, was born at a time when most Americans desperately needed some sort of financial miracle. The Great Depression (1929-35) was deepening, one-third of our normal working population was jobless, and public relief rolls were bulging.

At one point during the Depression, less than half the patients admitted to hospitals were able to meet their hospital

bills in full. But at the very time that patients were having a harder time paying for hospital and medical care, the services provided by doctors and hospitals were multiplying in number and effectiveness, through the development of improved professional techniques. Costs were rising.

Our hospitals had in fact been going through something of a private depression of their own during the middle twenties, when the rest of our economy was in a state of feverish prosperity. Between 1921 and 1931, while the bed capacity of American hospitals grew more than 50%, the bed *occupancy* rates of voluntary hospitals were falling. In one year, 1927-28, occupancy dropped from 78.7% to 65.5% of capacity. The reason: even under generally prosperous conditions 28 years ago, modern hospital care had become so expensive that most people could not meet its un-budgetable costs from current income. More and more people were becoming, unwillingly, charity patients.

Thus, while tax-supported hospitals were crowded, the average use of voluntary hospital beds decreased steadily to a Depression low of less than 50%.

**Dallas does it . . .** Justin Ford Kimball, Ph.D., was a teacher at Southern Methodist University from 1924 to 1929. Prior to 1924, Dr. Kimball had been a school teacher in Louisiana, a principal of two Texas schools and, for 10 years, from 1914-24, superintendent of the Dallas public schools.

In the year 1929, Dr. Kimball was appointed executive vice-president of Baylor University in charge of the university's medical units in Dallas. He knew as well as anyone the humiliating problems of school teachers facing unexpected hospital bills, and he came to un-

derstand quickly enough the dangerous plight of hospitals, more and more of whose patients could pay less and less for their hospital care.

As a school man in 1921, Dr. Kimball had organized a voluntary "sick benefit fund" among Dallas teachers. He had been inspired to do something to prevent a recurrence of the hardships caused among his fellow teachers by the influenza epidemics of 1918-20. Also, when Dr. Kimball took over at Baylor, he found the hospital in debt for current obligations and overdue bonds to the extent of 1.5 million dollars. Some school teachers were in debt to Baylor Hospital in amounts of \$1000 or more.

In December, 1929, the Baylor Plan was started, with more than the required 75% of the teachers enrolled in the plan. The plan originally offered 21 days of hospital care for fifty cents a month. The school teachers were soon joined by newspaper, banking and other Dallas working groups as subscribers to the Plan.

Baylor Hospital had to go it alone. The other two Dallas hospitals started their own hospital plans, but the idea of hospitals cooperating in offering a single community-wide prepayment program was the next phase of the Blue Cross story, and it was enacted in New Jersey.

**An idea evolves** The mutual problems of hospitals and patients were just as big and tough in New Jersey as in Texas, during the early 1930's. One man, Frank VanDyk, now vice president of New York's Blue Cross Plan, was trying, with growing frustration, to help 17 hospitals in Essex County (N. J.) keep afloat, when, in 1932, he heard of Dr. Kimball's Baylor Hospital Plan. Mr. VanDyk was then Executive Secretary

of the Essex County Hospital Council.

Mr. VanDyk went down to Texas in May 1932 to study this plan at first hand. He liked the basic idea and hoped to transplant it in New Jersey. Mr. VanDyk also recognized the tremendous potentiality of inter-hospital cooperation in a community program.

A study was made of the hospital admissions in 1930 in Essex County—the incidence rates, the length of stay, admitting diagnoses and costs of care. Insurance companies were asked if they'd like to administer an inter-hospital prepayment plan. The answer was, "No." They shied away from it as too much of a gamble in an uncharted field.

"We found that the idea had to be run on a voluntary non-profit basis," says Mr. VanDyk. "We had to blaze new trails because there was nothing to guide us. We had to create our own statistics, our own experience."

**Essex County Plan** Finally, in January 1933, the Essex County Hospital Council offered the first contract for prepaid hospital care on a multi-hospital basis. It cost \$10 a year for 21 days coverage, maternity service excluded.

At the end of one year 6000 people had been enrolled through various groups and 30 hospitals were taking part in the plan.

Meanwhile the idea was beginning to spread like gossip in a girls' boarding school. Barely two months after the Essex County, New Jersey experiment got going, people in St. Paul, Minnesota, began to enroll in a hospital plan offered by six hospitals. This plan, too, was pioneered by a man who, like Frank VanDyk, is still prominent in Blue Cross. E. A. vanSteenwyk, another Dutchman, and at one time a school teacher, introduced the idea of Blue

Cross to St. Paul. And in 1934 he also gave the name and symbol of Blue Cross to the national voluntary hospital-sponsored prepayment movement.

By 1935, the Blue Cross symbol was being adopted by new plans starting in many parts of the country. The pioneering states included California, Louisiana, North Carolina and West Virginia.

In 1939, the American Hospital Association adopted the Blue Cross symbol, with the A.H.A. seal superimposed on it, as the official symbol of A.H.A. approval of local plans. The basic requirements for A.H.A. approval of a plan were that it:

- stress public welfare
- limit itself to hospital charges
- enlist professional and public interest.
- allow free choice of doctor and hospital.
- operate on a non-profit basis
- be maintained on a sound economic basis.

#### About The Author

Nationally known as a consultant in medical administration, public relations and prepayment, the author has more than 25 years' experience in medical administrative work as executive secretary of the medical societies of New Jersey (state) and Westchester and New York (county). Mr. Bryan was administrator of New Jersey's Blue Shield Plan from 1950 to 1955. His authorship includes articles published in many of the leading medical journals as well as the book, "Public Relations in Medical Practice," Williams & Wilkins, 1954.

- be promoted in a cooperative spirit and a dignified manner.

By 1937, Blue Cross Plan reached a combined enrolment of a million persons. The yearly growth since then is shown in a tabulation elsewhere in this article. (See page 106.)

Today, about 28% of the people in the U. S. and Canada are members of Blue Cross. Blue Cross payment to hospitals account for approximately 30% of all the income of the nation's general hospitals received from patients or on their behalf.

**How it works** "Three cents a day for hospital care." That was the original slogan of Blue Cross, back in the early 30's. Three cents a day adds up to about \$10 a year. And in those days approximately one in every ten people went to a hospital each year for an average stay of about 10 days. Also, hospitalization in a semi-private room cost, then, on an average, about \$7 a day. Hence, if a large group of people prepaid \$10 a year each for hospital care, it was theoretically possible to insure the full payment of their needed hospitalization in semi-private accommodations with a comfortable margin for administrative expenses.

Such calculations were based, necessarily, on a number of assumptions: one, that hospital operating costs would remain fairly constant; two, that the Plan's enrollment would represent a fair cross section of the population, or at least, not be loaded with sickly people, expecting to need hospital care; three, that changes in the general health conditions, or new developments in medical practice, or the mere acquisition of pre-payment protection, would not cause insured people to go oftener to the hospital or to stay longer in a hospital than

before they had this protection.

This obviously is a pretty "iffy" matter; and, looking back over the economic and medical history of the past 25 years, it is a tribute to the adaptability of Blue Cross, and a testament to the public's evaluation of Blue Cross that the movement has spread so far and so fast.

**Inflation** It's interesting to note what has happened to some of these factors that should not be too variable—or whose variations are certain to keep a Blue Cross Plan constantly off balance:

The tabulation shows that in the past 10 years, there has been a continuous increase in the number of hospital admissions per thousand Blue Cross members—both for inpatient and for outpatient service. In fact, the latter index has doubled in eight years. The average length of hospital stay was growing shorter during the late 'forties and early 'fifties but in the past three years, even this index has reversed itself and started to grow again. When the average length of hospital stay was decreasing, it tended to offset the effect of the increasing rate or incidence of hospital admissions. Now, however, all the indices are going up. Many people would like to know where, when—and whether—these factors will ever level off.

The combination of these inflationary factors has produced in the nine years, 1947-56 an increase of 80.3% in the average rates of non-profit hospitals for a single room; an increase of 88.8% for a two-bed room; and an increase of 95.4% for a "multibed" room.

**Rates** Naturally the subscription rates of Blue Cross Plans have been adjusted to these trends. The fact that more people have been willing to pay

more and more money for prepaid hospital care, and to buy Blue Cross in the face of constantly rising subscription rates can be interpreted as a tribute to the quality of hospital care, to the attractiveness of the Blue Cross "service benefit" pattern, to the good sense and provident spirit of the people, or to the general expectation that everything is going to cost more money, anyway.

We have referred to Blue Cross "service benefits." This means that in the typical Blue Cross Plan, benefits are provided not in terms of a cash indemnity of  $x$  dollars against whatever the subscriber's hospital costs may be, but in terms of fully paid hospital service in a semi-private room for a stated maximum number of days for any given admission or for each contract year.

To offer its members fully paid hospital care, a Blue Cross Plan must maintain a contractual relationship with most if not all the hospitals in its area of operation, and in the long run, Blue Cross has to pay its contracting or "cooperating" hospitals the full cost of the semi-private services offered to its members. This means that the rates of any Blue Cross Plan must correspond to the per diem costs of its "cooperating hospitals." An insurance company, on the other hand, since it makes no pretense of covering the full cost of service, can maintain a constant rate, but the true value of its cash benefits against the rising costs of hospital care will be constantly depreciating in such inflationary times as we have been going through ever since World War II.

**Problems** Blue Cross has grown so fast, and in so explosive an economic atmosphere, that its future always seems to be in the immediate past.

Today Blue Cross is being criticized

for not meeting the needs of the aged (over 65) group; for not covering the chronically ill and the "medically indigent;" for not meeting the costs of diagnostic admissions; and for failure generally to provide "major medical" coverage.

Unlike most commercial insurance companies, Blue Cross does not cancel a subscriber when he reaches age 65. But many plans will not initially enroll a person 65 or older. People over 65 are asymptomatic in many years. Many are retired and some lack the incentive of young people to get on their feet and go to work. Older people use hospital services more frequently and stay longer than younger people. Nevertheless an increasing number of older workers and retired people are now covered by Blue Cross and serious study is being given to various ways of building reserves during earlier years against the extra needs of the later years.

The chronically ill benefit from Blue Cross whenever they become bed patients in general hospitals. But the special needs of the chronic patient are more likely to be custodial than medical. The problem of the chronically ill is not so much an insurance problem as it is one calling for public assistance. And the same may be said of the indigent and medically indigent groups.

**Diagnostic admissions** Many Blue Cross Plans are attempting to solve the dilemma of diagnostic admissions by paying for diagnostic services in the outpatient department, thus no longer requiring a patient to be hospitalized as a bed patient to receive diagnostic "workups." Naturally, this solution has raised new problems affecting the relations between the hospital and its attending physicians who practice in the

community. If Blue Cross pays for diagnostic service (X-ray, pathology, cardiology, etc.) in the O. P. D., then the hospital prepayment plan is entering the area of *medical* service that is claimed by and reserved to the Blue Shield medical care prepayment plan, and furthermore, Blue Cross then appears to be promoting hospital practice of medicine, in direct competition with the community's physicians.

Most physicians and hospital administrators recognize, however, that a workable solution must be found to the problem of diagnostic admissions. Diagnosis is an integral part of medicine, and the trend is undeniably in the direction of an ever more complete and comprehensive prepaying program.

The demand for more complete coverage applies to the long term disability as well as the acutely serious short term problem. But whether you define "major medical" coverage in terms of

specific "dread diseases," or a long period of coverage or a high maximum financial coverage, Blue Cross does pretty well in meeting the popular needs.

**Complete protection** More and more Blue Cross Plans are teaming up with their Blue Shield affiliates in offering an ever more complete protection. The hospital administrators and physicians, without whose active support neither Blue Cross nor Blue Shield could have developed, recognize that unless these voluntary non-profit plans can meet the needs of the American people, then the control of America's medical economy will pass out of their hands. The Blues have proved that our medical-economic problems *can* be solved on a voluntary basis, by those who know best *how* to solve them.

The unmet needs of today must become the prepaid benefits of tomorrow—and this is the continuing job of Blue Cross and Blue Shield.

Especially prepared by the author for MEDICAL TIMES, this is the second article of a four-part series on the Blue Cross and Blue Shield Plans.

---

**A SCAR IS THE SEAM** which welds the cut edges of a wound together. Both for surgical and for cosmetic reasons the skin scar should be as fine as possible. To achieve this result, accurate approximation of the open surfaces is essential. Stress is laid on precise coaptation of the cut dermis and the obliteration of all subcutaneous dead spaces. If properly introduced, the vertical mattress suture admirably serves both purposes and produces excellent end results.

—FROM *SURGICAL TECHNIGRAMS* by F. M. Al Akl, M.D.

## Mass Chest X-Ray Surveys



HYMAN S. ABRAMS, M.D.  
Murfreesboro, Tenn.

## and the Attending Physician

**T**he purpose of this paper is to present results of a tuberculosis case finding survey and to show the importance of the attending physician in such programs. Application of the knowledge gained from this and similar studies should alert all physicians to the value of the procedure.

**Value of Mass Chest X-Ray Surveys** The object of mass x-ray surveys is to detect unsuspected disease. The age, past history and housing facilities of the individuals surveyed, affect the yield of clinically significant findings. About 40 instances of active pulmonary tuberculosis, 57 of heart disease,<sup>4</sup> and 10 of bronchogenic carcinoma<sup>4</sup> are detected per 100,000 persons over 21 years of age surveyed in the United States. The number of patients having lung cancer would be much greater in studies restricted to males over 40 years of age.

The success of these screening tests is dependent on the active participation of the attending physician and the cooperation of the patient. Prolonged obser-

vation of abnormal lung shadows in individuals who are symptomless is practiced widely.

Recommendations for a diagnostic thoracotomy are not commonly proposed or accepted, in spite of the fact that the cure of lung cancer is dependent on early diagnosis.

Chest diseases can develop a short time following the survey examination. A pulmonary lesion can be obscured by normal chest structures, and a very early one may not cast a shadow. Consequently a negative report may give a false sense of security.

In photofluorography, thirty-five millimeter, seventy millimeter, or 4 x 5 inch film is used. Single or stereoscopic exposures are made. Single exposure on 4 x 5 inch film was used in the present survey. Photofluorograms of good diagnostic quality and study of all images with a magnifier are essential. Roentgen examination using a 14 x 17 inch film, or follow-up examination should be made when shadows, the nature of which

cannot be promptly determined, are seen.

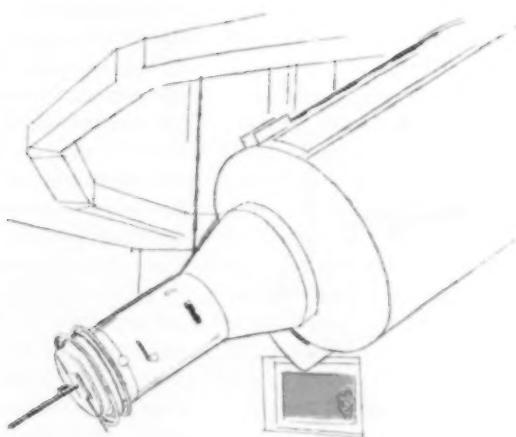
**Analysis of Cases:** The total number of persons surveyed was four thousand and five. Two thousand, seven hundred and seventy were patients hospitalized for neuropsychiatric conditions. The period of hospitalization for this type of patient is not necessarily continuous. A number of them are usually away on trial visits. Fifteen instances of active pulmonary tuberculosis, two of bronchogenic carcinoma, one of bronchiolar carcinoma, twenty-one of cardiovascular disease, and forty-six instances of other types of pulmonary disease were detected in this group. The latter included fractured ribs with complicating pneumothorax and pleural effusion, foreign bodies, substernal thyroid, hiatus hernia,

spontaneous pneumothorax, cystic emphysema, pleurisy with effusion, pneumonia, bronchiectasis and metastatic carcinoma. Calcification believed to be in the pericardium was seen in two patients. The remaining one thousand two hundred thirty-five was composed of one thousand fifty-six hospital employees, one hundred eleven volunteers, four out-patients and sixty-four applicants for employment. There were four instances of active pulmonary tuberculosis in nurse's assistants, one of bronchogenic carcinoma, three of heart disease and six of other chest diseases in this group. The latter included pneumonia, bronchiectasis and pulmonary metastases.

The cardiovascular diseases included one aneurysm of the pulmonary artery and one of the ascending aorta which subsequently ruptured, four aortic valve lesions, enlargement of the heart in individuals who proved to have hypertension, arteriosclerosis, aortic insufficiency and auricular fibrillation. There were also instances of diffuse dilatation of the aorta. The two photofluorograms interpreted as having calcification in the pericardium are not included in the tabulations. One of the patients who had a spontaneous pneumothorax had inactive tuberculosis, and one who had a pleural effusion was found to have hypertension. One patient was found to have a tack in the left main bronchus. Anomalies of ribs, lungs, heart and diaphragm, thickened pleura, calcifications, compensated heart disease, and conditions having no clinical significance were seen but not included in this report.

The incidence of disease detected at the time of admission to the hospital and in those already hospitalized was much greater than in the personnel





group. This is what would be expected.

The roentgen diagnoses were made from the findings in the initial or follow-up examination. Valuable time is lost by waiting for so-called pathognomonic changes to appear in the roentgenogram. Correlation of the history, physical, laboratory and x-ray findings make the diagnosis.

Cardiovascular disease is the leading cause of death in the United States. Cancer ranks second. Deaths from tuberculosis have been markedly reduced. However tuberculosis is still one of the major health problems. Early detection of cancer, tuberculosis and heart disease should be the objective of mass, chest x-ray surveys.

**Tuberculosis** The history and physical examination may be negative. Fever and increased pulse rate are often the only signs of early pulmonary tuberculosis. The symptoms, particularly their severity, depend on the type and stage of tuberculosis. They may be severe and acute in the pneumonic and miliary varieties. Weakness, malaise, loss of weight, dyspnea, cough with or

without expectoration, blood streaked sputum or hemoptysis may be symptoms of chronic pulmonary tuberculosis.

The physical examination is likely to be negative in patients whose disease is detected in survey examinations. Positive findings may include dullness, flatness and hyperresonance to percussion of the chest, increased whispered and spoken voice and rales.

The tuberculin test, preferably by the Mantoux technique, is valuable in diagnosis. A positive test indicates previous or concurrent infection with *Mycobacterium tuberculosis*. A negative tuberculin test does not completely rule out tuberculous infection.<sup>7</sup> It is however strong evidence against the presence of tuberculosis.

Bacteriological examinations for diagnostic purposes should include the study of sputum smears, preparation of cultures of tracheal and gastric secretions, and the inoculation of all suspected material into guinea pigs for the detection of *M. tuberculosis*.

The first roentgen sign of pulmonary tuberculosis is usually a small focus of



bronchopneumonia in or near a lung apex. Lobar consolidation, fibrosis, calcification, cavitation, and pleurisy with or without effusion are occasionally first found in survey examinations.

Treatment should include rest, streptomycin, isoniazid and PAS. Collapse therapy, or pulmonary resection<sup>2</sup> may be needed. BCG vaccine has been recommended for prophylactic purposes in individuals in overcrowded areas and for those who may be unavoidably exposed to tuberculosis and who have negative tuberculin tests.

**Cancer** The annual number of new patients having primary pulmonary carcinoma in the United States is about 31,000.<sup>1</sup> At least 80 per cent of this disease occurs in men.

An association between the use of tobacco and the development of pulmonary carcinoma has been reported.<sup>3</sup> In a study of physicians, the estimated mortality from cancer of the lung is 133 per 100,000 among those smoking 35 or more cigarettes a day as compared to 10 per 100,000 among non-smoking physicians.<sup>10</sup>

Symptoms of lung cancer depend on the histological type of and the location of the tumor, the extent of involvement, the degree of bronchial obstruction and the impairment of pulmonary function. Few, if any, symptoms are present in the early stages of the disease, and there are often none in bronchiolar or peripherally situated cancer before metastasis has occurred. Fever, progressive dyspnea, wheezing, cough with or without expectoration, hemoptysis, and chest pain may be present. Since lung cancers often spread to the brain, the symptoms may simulate those of brain tumor.

The findings on physical examination are those of bronchial obstruction, atelectasis, emphysema, pneumonia or cavitation. Dullness, flatness, or hyperresonance, are elicited by percussion. There may be diminished or absent breath sounds and rales. Metastasis to lymph nodes, recurrent laryngeal and phrenic nerve paralysis, and dilatation of veins of the thorax, neck and arms may occur.

Bronchoscopic examination is an effective diagnostic procedure except in peripherally situated tumors. It is often possible to make a diagnosis from biopsy and examination of aspirated secretions and sputum for malignant cells. Thoracotomy is frequently necessary to diagnose lesions in and peripheral to small bronchi.

Roentgen examination of the chest, in addition to the routine posterior anterior position, should include lateral and oblique positions, together with stereoscopic exposures, laminographic, and bronchographic examinations when such are indicated. A comparison with previous roentgenograms, when such exist, is often of much value in arriving at a diagnosis.

The roentgen signs of lung cancer are not pathognomonic. However, a presumptive diagnosis may be possible. A small nodular density or infiltration in the lung may indicate early cancer. A circumscribed density 1 to 4 cm. in diameter surrounded by normal lung may be a "coin" lesion.<sup>5</sup> About one-third to one-half of so-called "coin" lesions are reported to be malignant. The incidence is higher if restricted to males over 40 years of age. Calcification in malignant lung lesions is rare. Notching in the margin of the lesion has been reported as an indication of malignancy.<sup>6</sup> The mediastinum may be widened. Primary growths, metastases, and many other conditions cause hilar enlargement. A beaded infiltration often extends into the lung from a primary malignancy in a hilus. Atelectasis and emphysema may result from bronchial obstruction. The latter is best demonstrated during the expiratory phase of respiration. Complications include pneumonia and lung abscess. Cavitation is also produced by the necrosis of tumor tissue.<sup>8</sup> An unresolved or recurring pneumonia may at times, be a significant finding suggesting cancer. The wall of a carcinomatous abscess is usually irregular and thick, and the cavity may contain a small amount of fluid. Parts of the bony thorax, chiefly ribs, may be destroyed. Alleviation of symptoms, and roentgen signs of healing following medication tend to obscure the true nature of the lesion. Chronicity

and even stationary appearance of a lung lesion does not rule out malignancy.

X-ray therapy is used for certain tumors. Lobectomy may be adequate for small lesions. However pneumonectomy with excision of regional lymph nodes is preferable when possible. Lobectomy and palliative x-ray therapy may be indicated for certain inoperable cases. General measures, maintenance of nutrition, and treatment of complications should be instituted as necessary.

**Heart Disease** Symptoms of some cardiac and related diseases are at times mild and do not attract attention. Mental deficiency, social and economic conditions, differences in threshold of pain tolerance and the minimizing of symptoms are barriers at times to early diagnosis.

The roentgen changes of cardiovascular importance which are most likely to be detected in chest survey films are effusions, mild pulmonary vascular stasis, probable residuals of pulmonary infarcts, tortuous aorta, aneurysms, pericardial adhesions and calcifications, and enlargement of the heart.

Chest x-ray surveys are therefore of value in detecting heart disease in its various stages, in demonstrating changes that may be producing symptoms apparently unrelated to the cardiovascular system, and in providing information which may be of future clinical value to the individual.

### Summary

1. *The object of mass x-ray surveys is to detect unsuspected disease. Much of the success of these programs depends on the history, physical, labor-*

*atory, and roentgen findings, and on follow-up examinations when indicated. The active participation of the attending physician is therefore im-*

portant. Photofluorograms of good diagnostic quality are essential.

2. Results of a chest x-ray survey are presented. Nineteen instances of pulmonary tuberculosis, four of bronchogenic carcinomas, and other pathological conditions were detected.

3. The diagnosis and treatment of pulmonary tuberculosis and cancer have been discussed, and the value of survey for detecting heart disease

has been presented.

4. An awareness that tuberculosis, cancer, and heart disease may be causing irreparable damage during a so-called silent period should stimulate the physician to attempt to make the diagnosis earlier.

5. X-ray surveys are very valuable in the detection of chest diseases. The yield of any particular survey is determined by a number of factors.

### Bibliography

1. Cameron, C. S.: Cancer statistics: incidents, mortality, and results of treatment. *Med. Clin. N. A.*, 40:581, 1956.
2. Cecil, R. L., and Loeb, R. F.: *A Textbook of Medicine*. W. B. Saunders Co., Philadelphia, 1956.
3. Ford, W. B., Kent, E. M., Neville, J. F., Jr., and Fisher, D. L.: "Coin" lesions of the lung. *Am. Rev. Tuberc.*, 73:134, 1956.
4. Garland, L. H.: The detection of carcinoma of the lung by screening procedures, particularly photofluorography. *Am. J. Roentgenol. and Rad. Therapy*, 74:402, 1955.
5. Hammond, E. C., and Horn, D.: The relationship between human smoking habits and death rates. *J.A.M.A.*, 155:1316, 1954.
6. Henshaw, H. C., and Garland, L. H.: *Diseases of the Chest*. W. B. Saunders Co., Philadelphia, 1956.
7. Mascher, W.: Tuberculin-negative tuberculosis. *Am. Rev. Tuberc.*, 63:501, 1951.
8. Moyer, J. H., and Ackerman, A. J.: Bronchogenic carcinoma as a differential diagnostic problem in pulmonary disease. *Am. Rev. Tuberc.*, 63:176, 255, 399, 1951.
9. Rigler, L. G.: The roentgen signs of carcinoma of the lung. *Am. J. Roentgenol. and Rad. Therapy*, 74:415, 1955.
10. Wynder, E. L., and Cornfield, J.: Cancer of the lung in physicians. *New England J. Med.*, 248:441, 1953.

### V. A. Hospital



*Prepared especially for Medical Times  
by C. Norman Stabler, market analyst  
of the New York Herald Tribune*

## INVESTING

### for the Successful Physician

#### THE 1958 OUTLOOK

This January, like its predecessors, was ushered in with the normal number of predictions and forecasts on the new year's probable trend of business. They were far more pessimistic than those a year ago, two years ago and indeed five years ago.

Doubtless this reflected the steady decline that took place during 1957's two or three closing months. We stepped down from the peaks. It was a moderate step, but it was enough to signal a definite change in trend.

Contributing to the pessimistic note was the fact that the recession from the peaks happened to coincide with certain other developments; Russia scored over us with its satellite, there was President Eisenhower's illness, and the stock market, which had accurately predicted the future trend in business six months ago, remained highly erratic,

making new lows later in December.

Generalities are dangerous, but the consensus of the new year's predictions is that we are not headed into any devastating deflation. When we get these normal corrections, the psychology of business, and of individuals, is apt to change suddenly, and a few are inclined to look for the worst.

At such times it may be well to consider how far we have come—to look back a few years and realize the word 'crisis' is not a new one in the United States or in any other country.

One of the big statistical organizations, Dun & Bradstreet, announced the results of a poll last month which indicated that 91 per cent of the business executives expect sales will be equal to or exceed those of 1957. Moreover 81 per cent of them look for profits to be equal or better than last year's.

Polls show varied results. For instance as against the above optimistic forecast, an earlier one taken by the National Association of Manufacturers indicated that a third of the executives looks for profits to be lower, and only 64 per cent expected sales volume to hold.

Anthony Gaubis, investment counselor and economic consultant, reports that several private surveys suggest that business men have become more realis-

tic during the last few weeks. They are less optimistic than in the late Fall. He finds a greater tendency to question the hope or expectation of a continued high level of consumer demand, as more and more companies announce cutbacks in work schedules and initiate economies which directly or indirectly mean a reduction in employment.

"With heavy engineering contracts and orders for structural steel continuing to show substantial reductions from

---

## FORECAST BY UNITED

**GENERAL BUSINESS** Business activity will slacken further in the first half, and full year activity will be moderately under 1957. An upturn is expected in the second half. Stimulus will come from increased government spending, completion of inventory corrections, and easier credit.

**PRICES** Average wholesale prices will show little change during the next twelve months, although trends in individual items will vary considerably. The cost of living (consumer price) index, now around 121, is expected to edge up to about 123 by the end of 1958.

**RETAIL SALES** Total retail dollar sales are likely to show about a \$2 billion gain over the indicated record \$200 billion for 1957. Most of the increase will reflect higher prices. Consumer spending for services of various kinds will exceed 1957.

**AUTOMOBILES** Output of around 6 million new cars and 1 million trucks is forecast, compared to 6.2 million and 1.1 million respectively in 1957. Stiff competition will continue to induce liberal trade-ins. The auto workers are expected to win some new wage concessions — but probably only after a strike. Higher prices are likely on the 1959 models.

---

year-ago levels, we are seeing a gradual realization that today's high level of construction activity merely reflects record-breaking contract awards of one and two years ago, as well as an acceleration of work in progress made possible by a greater availability of materials," he says.

"Local, state and Federal spending can be expected to increase during the year, but the favorable effect on the economy will certainly be mitigated to

some extent by the reductions in the spending power of the masses, who are faced with higher local and state taxes, and who can no longer look forward with confidence to an easing of the Federal tax burden. (It might be well to recall that part of the extreme optimism of last spring and summer was due to the widespread predictions that the Democrats and Republicans would compete with each other for credit in lowering personal income taxes during

---

## BUSINESS SERVICE FOR 1958

**STEEL** Production is estimated at 106 to 108 million tons versus 115 million this year. This will mean the lowest output since 1954. Supplies of all steel items will be plentiful during 1958, and new automatic wage increases are likely to bring some further price advances.

**BUILDING** Total outlays in 1958 should reach \$48 billion, a \$1 billion gain over 1957. Residential outlays should be up about 4%; utilities +4%, public works construction, +6%. Private nonresidential volume is expected to be off around 8%. Mortgage money will ease a bit. Building costs will edge higher.

**LABOR** Increased management resistance to new wage boosts will probably bring more strikes in 1958. Nevertheless, with many increases automatic, a 2%-3% further rise in average hourly wages is likely.

**EARNINGS-DIVIDENDS-CREDIT** Total 1958 corporate profits are expected to be about 5% lower than in 1957. Dividends will also be off slightly. Credit will be eased somewhat — and bond prices are likely to recover further.

---

FOR  
PROFOUND  
VASODILATING EFFECT  
IN ACUTE  
VASOSPASTIC  
CONDITIONS

**ILIDAR** 'ROCHE'

Increases peripheral circulation and relieves vasospasm by (1) direct vasodilation, and (2) adrenergic blockade. Provides relief from aching, numbness, tingling, and blanching of the extremities. Exceptionally well tolerated.

ILIDAR®—BOARD OF ADAPETINE  
ROCHE LABORATORIES  
Division of Hoffmann-La Roche Inc  
Nutley 10, New Jersey

the election year of 1958, and thereby add to the buying power of the public.)"

United Business Service, Boston, believes the business upturn will come in the second half of this year. Its forecasts, on specific items, made last month, contained the thoughts shown in the table on pages 96a and 97a.

#### AN APPRAISAL OF THE STOCK MARKET

Shelby Cullom Davis, managing partner of the Stock Exchange firm bearing his name, is one of the Wall Street men who believes we will see the normal amount of sunshine in 1958's stock market, despite the present clouds. His views were delivered last month at the Dean's Day Homecoming, New York University.

The stock market is, at various times, called all sorts of things by those who venture into the maze. Mr. Davis likened it to a woman, in that "it can be



"You're the first proctologist I've met . . . Say something proctological."

MEDICAL TIMES

very emotional at times," and, "ever so often it likes to have a good cry. It feels better afterwards."

The devastating, emotional behavior of the list in the fall of last year represented, he said, the same kind of good cry that we had in 1946 and in 1937. Within a few months those two bear markets were all over. The recession in business in those years did not carry through into a depression.

The recent decline in the market, he believes, accomplished two objectives: it discounted the potential bad news of the future, such as a decline in business and a resulting decline in corporate profits; and it created a stronger technical market position by converting potential sellers (at July's high prices) into potential buyers. Moreover the short position in November was at its highest since 1932. It declined a few shares as of Mid-December.

"The week-end cocktail set is now talking about how low the market is going, rather than how high—always a good sign," he observed.

The death of the bull market was a blow to confidence, and in normal times the rebirth of confidence is a slow process. At the peaks of other booms we had vast commercial office buildings, skyscrapers, new country clubs and churches, which traditionally seem to rise at the end of a great economic upsurge, he pointed out, "but in other times we have not had the emergence of a great threat to our national existence, which must galvanize us into eco-

The information set forth herein was obtained from sources which we believe reliable, but we do not guarantee its accuracy. Neither the information nor any opinion expressed constitutes either a recommendation or a solicitation by the publisher or the authors for the purchase or sales of any securities or commodities.

FOR  
PROLONGED  
VASODILATION  
IN CHRONIC  
CIRCULATORY  
DISORDERS

**RONIACOL** 'ROCHE'

acts primarily  
on the small  
arteries and  
arterioles to augment  
collateral circulation.  
Especially useful for long-term  
therapy in older  
patients whose feet are  
"always cold".

RONIACOL®—BRAND OF BETA-PYRIDYL CARBONOL  
ROCHE LABORATORIES  
Division of Hoffmann-La Roche Inc  
Nutley 10, New Jersey

nomic activity as a matter of national survival..."

Mr. Davis believes this new element will contribute in a vital manner to a turn in business and in the stock market.

"I take as a fundamental premise," he said, "that we shall not have a depression; I am inclined to agree with those business economists and students of the business cycle that the present recession will be held to moderate limits, say with 5 per cent of the present.

"The stock market already reflects this thinking. It will not be a one way street in 1958—any more than it was in 1957. There may well be days of abject optimism and pessimism. But . . . I believe the days of optimism. . . . will outnumber the days of pessimism.

"Just as investors in 1957 strove to discount a recession or depression, so will investors in 1958 strive to discount the coming turnaround and rise in business—and possible inflation. The odds will favor the buyer in 1958 just as, riding at the top of the boom and at certain high levels of the market, the odds favored the seller in 1957. Not only will the investor begin to discount the coming rise in business due to revival of capital goods industries and renewed consumer spending, but certainly there will be more inflation talk spurred on by the foreign situation and labor's wage demands in 1958.

"The normal expectation would be for the stock market recovery in 1958 to take place with varying degrees of selectivity. The emphasis will be upon groups and industries that first begin to show increasing earning power or those which have become unduly depressed due to being out of fashion. The so-called defensive stocks, foods, tobaccos, public utilities etc. will begin to lose favor as the economic skies clear. Because they have declined less than other groups, they will be subjected to selling pressure in order to raise funds to buy the more depressed groups which will enjoy the largest increases in earnings, as for example in the capital goods section.



#### **A Mutual Investment Fund**

Check (✓) for the prospectus and descriptive literature you would like to receive:

- United Science Fund**
- United Income Fund**
- United Accumulative Fund**
- United Continental Fund**

#### **WADDELL & REED, INC.**

**Principal Underwriters**

Offices Coast to Coast  
20 WEST 9th, KANSAS CITY 5, MO.  
40 WALL ST., NEW YORK 5, N. Y.

very much doubt, this rise in population and in family formation will mean a greater volume of business and a greater volume of profits.

"Perhaps we discounted the sensational 60's too far ahead in 1956-57 but time

does march on. The 60's will be here sooner than we think. This realization plus the slow but steady creeping inflation will cause common stocks and in particular the growth stocks to become more valuable in 1958."

## HOW FAR AND HOW LONG?

The stock market's decline was the sharpest since 1946 but not nearly as severe as those of 1929 or 1937. Moreover, this decline has not been restricted to this country. From the bull market peaks, the percentage declines have been greater in the stock markets of Brussels, Toronto, Bombay, London and Amsterdam.

These observations were made recently by the firm of Francis I. duPont & Co., in questioning how far and how long the bear might take us. Dow theorists now say we have been in a bear market since 1956, but the theory doesn't give us data on its probable longevity or severity.

We do know, the firm points out, that bear markets last only 50 per cent to 60 per cent as long as bull markets, and we know that they tend to cancel between one-third and two-thirds of the preceding gains—with the average retracement being around one-half. We also know there are wide variations from these average figures.

To get our bearings, the firm assumes that a man invested \$1,000 in June, 1949, when the recent bull market started. When Eisenhower was elected in 1952 that investment was worth \$1,800. At the low point in 1953 it was worth \$1,620. At the peaks of 1956 and

1957 it had grown to a value of \$3,250.

At the recent low it totalled \$2,620. If half of the gains since 1949 were cancelled the fund would be worth \$2,225 while if half of the gains since 1953 were retraced it would be worth \$2,435. In terms of the Dow Jones industrial average such cancellations would mean either 340 or 390.

## IN INVESTING, TOO— RESEARCH IS IMPORTANT

And research has been our key to over 100 years of successful service to our clients. Our extensive Research Department and qualified account executives are at your service to assist with your own investment program.

Our booklet, "Some Investment Pointers" is yours for the asking. Please write or phone Department ISD.

## H. HENTZ & CO.

Members of New York Stock Exchange and Other  
Leading Stock and Commodity Exchanges

72 WALL STREET, NEW YORK CITY, BO 9-8420  
Offices in Principal Cities  
ONE HUNDRED YEARS OF SERVICE

## HUTTON'S MISSILE AVERAGE

The Stock market is forever being measured by averages. Various newspapers and statistical organizations have perfected their own sets of averages, the individual is free to make his own if he feels he can improve on those already outstanding, and we have averages that apply to specific categories of stocks.

The sudden awareness of the missile industry has caused the firm of E. F. Hutton & Co. to launch a missile index. It is composed of 22 leading missile and missile fuel stocks with weekly readings computed back to the market highs of last July. Allowing the reading of 100 in this new Index to match the

July highs, the record showed a 20.8% decline from July to the end of October. This compares with a 16.4% decline in the Dow-Jones Industrials for the same period. Missile stocks outpaced the general market on the decline.

From the end of October to November 15, the Index made a sharp advance from 79.24 to 90.14, an increase of 13.7%. In contrast to this movement, the Dow Industrial Average registered a slight net loss.

These facts would indicate that, while the missile stocks are very capable of falling with the market, they are not capable of carrying the general market up with them in a sharp upswing.

## GLAMOUR FOR POTATOES

The craze to reduce has taken a toll in the sale of potatoes. In food chains, however, the trend appeared to have been reversed in 1957. The Chain Store Age ascribes this to more eye appeal.

The potato men have washed, scrubbed and film-bagged their product in a drive to stop the declining per capita consumption. The result is, the magazine says, that 1957's potato sales in food chains with two or more stores, will be about \$240,000,000—the highest ever.

Government reports show that potato consumption will rise slightly. Food chain sales figures indicate potatoes will hold their own as the number one produce item in dollars and as a tonnage item that accounts for 20% to 30% of all fresh fruits and vegetables sold in food stores.

Prepackaging has helped make it

easy for customers to buy potatoes—75% of those bought in food chains are prepacked with 50% to 60% packed at warehouse or shipper level. Five and 10-pound bags—frequently film bags—are popular today rather than the 50 and 100-pound sacks of some years ago. New packages such as one or two baking potatoes in aluminum foil and film-bagged, processed, peeled, and sliced potatoes for french frying are opening up other markets.

The "lowly spud" is also going into frozen form with the french fries, whipped, hash brown and other varieties showing one of the biggest sales increases in the fast-growing frozen-food field. In fresh form, new potato sources and additional varieties make it possible to offer more "new" potatoes—a very definite customer preference.

## WARRANTS FOR SPECULATION

For he who is a speculator at heart, the stock market has a number of warrants on leading corporations. A warrant amounts to a long-term Call, or option to buy, at a specific price.

Those who invest in warrants should realize that the possession of a warrant does not entitle the holder to dividends or the right to vote in the corporation's affairs. He has no equity in the company. He merely has the means of acquiring such an equity, within a specified length of time, at a price.

Consequently the market prices of warrants fluctuate in accordance with the price changes of the stock to which

they apply. A few warrants are perpetual, but the vast majority has an expiration date.

In times of a bull market, the percentage gains in warrants can be sensational. Conversely, their price can sink to zero if the so-called privilege turns out to be no privilege at all. The buyer of a warrant must realize exactly what he is acquiring, should be venture into this market. Become acquainted with the expiration dates, and the other provisions, of the one you buy.

The firm of Joseph Faroll & Co. recently prepared the list of warrants shown below.

## WARRANTS FOR SPECULATION

	EXPIRATION DATE	OTHER PROVISIONS
*ALLEGHENY CORPORATION	Perpetual	To buy 1 com. sh. @ \$3.75.
*ARMOUR & CO.	12/31/64	To buy 1 com. sh. @ \$15 to 12/31/59—\$17.50 thereafter.
*ATLAS CORPORATION	Perpetual	To buy 1 com. sh. @ \$6.25.
CONSOLIDATED DENISON MINES	4/1/60	To buy 1 com. sh. @ \$12.00 to 4/1/58—\$15.00 thereafter.
GEN. TIRE & RUBBER (\$70)	6/15/61	To buy 3.12 com. shs. @ \$22.44 per sh. to 6/15/59—\$24.04 thereafter.
GEN. TIRE & RUBBER (\$60)	9/15/61	To buy 3.12 com. shs. @ \$19.33 per sh. to 9/15/59—\$20.83 thereafter.
GEN. TIRE & RUBBER (\$25) (w.i.)	10/1/67	To buy 1 com. sh. @ \$25 from 1/1/58 to 9/30/62—\$28 thereafter.
KERR-McGEE OIL (w.i.)	6/30/64	To buy 1 com. sh. @ \$80 beginning 4/1/58.
*MACK TRUCKS	9/1/66	To buy 1 1/3 com. shs. @ \$30.00 to 8/31/59—\$32.33 to 8/31/63—\$37.59 thereafter.
*MOLYBDENUM CORPORATION	10/18/63	To buy 1 com. sh. @ \$30.00.
NAT'L TELEFILM ASSOC. (w.i.)	6/15/62	To buy 1 com. sh. @ \$6.75 to 6/15/58—\$1.00 per sh. higher each successive year.
*NORTHSPAN URANIUM	12/31/66	To buy 1 com. sh. @ \$3.00.
SHERATON CORP. (old)	10/1/64	To buy 1.2 com. sh. @ \$8.33 per share.
SHERATON CORP. (new)	9/1/66	To buy 1.2 com. sh. @ \$20.83 per share.
SPERRY RAND CORP. (w.i.)	9/15/67	To buy 1 com. sh. @ \$25 from 3/17/58 to 9/15/63—\$28 thereafter.
*TRI-CONTINENTAL CORP.	Perpetual	To buy 1.27 com. shs. @ \$17.76 per share.

\* Listed on the American Stock Exchange.

(w.i.) Warrants may be acquired separately or in conjunction with accompanying debentures.

(Vol. 86, No. 1) January 1968

## GROWTH IN DRUG INDUSTRY

A continued expanding market for the ethical drug industry is foreseen by the firm of Harris, Upham & Co. in the years ahead, due to the growth of world population and increased longevity. The report is immediately concerned with the potentials of various fields of medicine, research, vaccines, hormones and nutrition.

Ethical drug sales are reported as increasing from \$150 million in 1939 to an estimated \$1,500 million in 1956 with the development of such products as penicillin, the broad spectrum antibiotics, the meti-steroid drugs, tranquilizers and polio vaccine. Seventy-five per cent of the 1956 sales are said to be derived from products unknown in 1949.

Before describing the future markets for specific drugs and their makers the study states, "The fortunes of an ethical drug enterprise, as those of an elec-

tronic or atomic firm, depend to a large extent on the success of its program of scientific investigation and product development. Although research is something that does not appear on the balance sheet, it is a major determinant of the economic stability of a medicinal chemical firm.

According to the Harris, Upham report, "In 1956 antibiotics accounted for over one fifth of all ethical drug sales . . . The large capacity for production of these agents and the fact that they overlap in their areas of effectiveness have resulted in severe price cuts . . . Patented antibiotics have not suffered the same price reductions as penicillin and streptomycin.

"During the past three years the sale of the so-called tranquilizer drugs has already grown to an estimated \$150 million and as yet no plateau of sales has been reached. It may be expected

### Guide For Investors

Based on recommendations of the Securities and Exchange Commission in cooperation with the New York Stock Exchange, American Stock Exchange, National Association of Securities Dealers and others.

1. Think before buying, guard against all high pressure sales.
2. Beware of promises of quick spectacular price rises.
3. Be sure you understand the risk of loss as well as the prospect of gain.
4. Get the facts—do not buy on tips or rumors.
5. Give at least as much thought when purchasing securities as you would when acquiring any valuable property.
6. Be skeptical of securities offered on the telephone from any firm or salesman you do not know.
7. Request the person offering securities over the phone to mail you written information about the corporation, its operations, net profit, management, financial position and future prospects. Save all such information for future reference.

that additional products superior to those now available will be discovered.

"Hormone preparations have shown remarkable growth in the past 6 years . . . In 1956 this market has grown to an estimated \$80 million . . .

"The vaccine production know-how has implications far beyond the market for polio vaccine . . . there are indications that effective immunizing procedures may be developed in other diseases, encephalitis, mumps, and the common cold.

"Vitamins and hematinics are the second most important group of drugs in terms of gross income, accounting for an estimated 13 per cent of industry

sales in 1956. Despite a recent weakening of prices of bulk vitamins, sales of these drugs have shown a steady growth.

"Although definite therapy for most cardiac diseases is not available, current progress in medical research gives promise of real therapeutic achievements in this area.

"Agricultural products, a development of the past few years, are estimated to have totaled about \$150 million in sales in 1956 . . . they have proved to be of definite value as feed supplements in preventing disease and increasing the rapidity of weight gain of stock and poultry.

#### PUBLIC PREFERENCES BLUE CHIPS

The investing public, at least that portion of it that frequents the board rooms of brokerage firms, prefers the old line issues, the so-called blue chips, rather than the "cats and dogs."

At least that is the conclusion one must draw from figures of the Tele-register Corporation, which operates the 486 quotation boards throughout the country. This corporation will put any stock on any specific board that the customers want; and the majority wants the big ones.

In a recent survey of the various stocks carried on the 486 boards, Chrysler headed the list by being on 470. Next came General Motors, Standard Oil (N.J.) and United States Steel, on 469. General Electric and Bethlehem Steel are on 465.

Westinghouse Electric, New York Central, and American Telephone are quoted on 460 boards. Then come Anaconda on 459, Republic Steel on 458, Radio Corp. on 456, Boeing Airplane,

Kennecott Copper, and International Telephone on 455.

Oil and railroad issues led in popularity in October, the Tele-register compilation showed. Of the top 100 issues in boardroom popularity 13 each were in oils and rails.

Then came the metals and aircrafts with nine each; chemicals and steels with eight each. There were five utility and communications issues.

There were four each of airline and automobile issues; three each of rubber, mercantile and amusement; two each of paper, textile, farm implement, electrical equipment, liquor, and building; and one each of tobacco, soft drink, office equipment, container, air conditioning and electronics.

The same situation prevails on the American Stock Exchange where the top issues are Electric Bond & Share, U.S. Foil B, Pacific Petroleum, Molybdenum, Imperial Oil, International Petroleum, and Barium Steel.

## FUNDS' STAKE IN METAL AND MINING

Investment companies, members of the N.A.I.C., had an investment of \$476,070,000 in the common stocks of the metals and mining industry last quarter, a survey by the association covering 167 members shows. It cov-

ered the stocks of 127 companies in that industry.

Aluminium, Ltd. retained its position as number one in point of preference. The rating of the first ten, in three different periods, is shown in the table.

## BOSTON FUND A SELLER OF EQUITIES

Boston Fund reports that it reduced its common stock holdings substantially prior to the break in the stock market of last summer and fall.

"Over the last two years," it advised its holders, "as stock prices continued to move upward in spite of a levelling out of business profits in some areas, our Fund has been a substantial seller of equity securities on balance. The net reduction in common stock holdings has amounted to something over \$24,-

000,000, which has had the effect of reducing the portion of our account invested in common stocks from about 73 percent to approximately 58 percent.

In addition, during this period, approximately \$6,500,000 of common stocks were sold and replaced with other stock issues which appeared, in the light of the unfolding business situation, to be priced more realistically in relation to earnings prospects."

## BRIGHT X-RAYS

Television Shares Management Corporation, sponsors of Television-Electronics Fund, Inc., keeps a weather eye open for new developments in science, of which there are many. Recently it reported on a new thinscreen amplifier for X-ray viewing that multiplies by 100 times the brightness of images in certain types of medical X-ray examinations. At the same time it may reduce exposure of the subject to X-ray radiation. It was demonstrated in experimental form to the American Roentgen Ray Society by a scientist of RCA.

The device was described as an electronic amplifying panel comparable in size and thickness to present conventional X-ray fluoroscope screens, but

having these special capabilities:

It provides a stationary display of an X-ray image approximately 100 times brighter and with far greater visual contrast than those produced on present conventional screens, permitting immediate viewing in lighted surroundings rather than in the complete darkness and with lengthy dark-adaptation needed for viewing with present equipment.

The new RCA device holds its bright image for extended viewing up to 30 seconds after a short exposure to X-rays, and thus can cut down substantially the amount of X-ray exposure in the continued viewing of stationary images.

## TEN LARGEST HOLDINGS BY INVESTMENT COMPANIES IN THE METALS AND MINING INDUSTRY

### FOURTH QUARTER—1957

	NO. OF IN- VESTMENT CO.'S. HOLDING	DOLLAR AMOUNT (000)
1. ALUMINUM LTD. ....	50	\$79,989
2. KENNECOTT COPPER CO. ....	53	57,909
3. ALUMINUM CO. OF AMERICA ....	35	44,547
4. PHELPS DODGE CORP. ....	31	34,911
5. REYNOLDS METALS CO. ....	21	33,910
6. INTERNATIONAL NICKEL OF CANADA ...	37	28,583
7. ANACONDA COMPANY ....	40	16,111
8. AMERICAN SMELTING & REFINING CO. ....	26	15,771
9. CLIMAX MOLYBDENUM CO. ....	18	14,011
10. NEWMOUNT MINING CORP. ....	19	12,858

### THIRD QUARTER—1956

	NO. OF IN- VESTMENT CO.'S. HOLDING	DOLLAR AMOUNT (000)
1. ALUMINUM LTD. ....	52	\$71,576
2. REYNOLDS METALS CO. ....	20	48,535
3. ALUMINUM CO. OF AMERICA ....	37	41,422
4. KENNECOTT COPPER CO. ....	49	40,133
5. PHELPS DODGE CORP. ....	30	25,225
6. INTERNATIONAL NICKEL OF CANADA ...	31	24,521
7. NEWMOUNT MINING CORP. ....	16	13,989
8. KAISER ALUMINUM & CHEMICAL ....	22	11,769
9. MAGNA COPPER ....	14	11,301
10. ANACONDA COMPANY ....	26	10,966

### FOURTH QUARTER—1955

	NO. OF IN- VESTMENT CO.'S. HOLDING	DOLLAR AMOUNT (000)
1. ALUMINUM LTD. ....	40	\$42,484
2. KENNECOTT COPPER CO. ....	52	39,729
3. ALUMINUM CO. OF AMERICA ....	28	31,617
4. PHELPS DODGE CORP. ....	37	27,788
5. REYNOLDS METALS CO. ....	16	20,141
6. AMERICAN SMELTING & REFINING CO. ....	21	15,285
7. INTERNATIONAL NICKEL OF CANADA ...	27	11,990
8. ANACONDA COMPANY ....	18	8,777
9. NEWMONT MINING CORP. ....	19	8,706
10. CLIMAX MOLYBDENUM CO. ....	16	8,235

Based on latest available financial reports of member companies at the time of each survey.

Source: National Association of Investment Companies.

# ASYMPTOMATIC ALERT

FOR 8-12 HOURS ON A SINGLE TABLET



NEW **SUSTAINED ACTION**  
**TRIPLE-LAYER TABLET**

Keeps patients *asymptomatic* and  
alert up to 12 hours with one tablet

**GROUP 4** HIGH POTENCY  
LOW SEDATION  
*antihistamine*  
**"THERUHISTIN"-S.A.**

Brand of Isothipendyl hydrochloride



**4-mg. starter dose** (rapid release for rapid, initial control)

**2-mg. booster dose** (provides continuing therapeutic levels)

**6-mg. follow-up dose** (slow release for sustained, prolonged relief)

"Twelve hours was the duration of action [of one tablet] in over 90 per cent of a series of 125 patients treated with 'THERUHISTIN'-S.A."<sup>1</sup>

The Group 4 features of "THERUHISTIN"—high potency/low sedation—have been established in recent trials involving 602 patients.<sup>2</sup> Effective results were obtained in 92 per cent of the cases and drowsiness was reported in only 0.8 per cent—or only 1 out of every 100 patients.

**DOSAGE:** "THERUHISTIN"-S.A.—1 tablet on arising; repeat every 8-12 hours as necessary. **SUPPLIED:** "THERUHISTIN"-S.A. Tablets, 12 mg., bottles of 100 and 1,000.

**ALSO AVAILABLE:** "THERUHISTIN" Tablets, 4 mg., bottles of 100 and 1,000. "THERUHISTIN" Syrup, 2 mg. per 5 cc. (tsp.), bottles of 16 fluidounces.



**AYERST LABORATORIES** New York, N. Y. • Montreal, Canada

1. Spielman, A. D.: Personal communication. 2. New and Unused Therapeutics Committee, Am. Coll. Allergists: Interim Report at Thirteenth Annual Congress, Mar. 20-22, 1957, Chicago, Ill., Ann. Allergy, to be published.

**Q.** I have a few shares of Canada Dry, and they never seem to do much in the stock market. Should I hold them?

**A.** Be thankful they haven't given you the action you appear to crave. We could name a few hundred stocks that have given their holders plenty of action over the last few months, and you know the kind we mean. Canada Dry, in fact beverage stocks generally, have been inclined to hold within a narrow range. The one you hold is well diversified in its field. In addition it enters the alcoholic beverage field through Johnny Walker scotch. Its earnings tend to rise. They were \$1.51 a share in the 1956 fiscal year and \$1.80 is currently estimated, and with \$2 a share projected for 1958.

**Q.** My family has invested in American Can for years. How do you rate the company?

**A.** It is the largest U.S. and Canadian producer of metal and composite containers for the packaging of food and various non-food items. Through the recent acquisition of Dixie Cup it is also a major producer of paper cups. The company's recent history indicates it is expansion minded. The stock is of investment calibre. In a sour market, as we all know, good ones go down along with those of lesser quality, but we regard American Can as quality.

**Q.** I have a few shares of duPont. In view of the decision on its holdings of General Motors, should I sell?

**A.** If you want to sell, do so for another reason. There are tax angles involved which are not yet well defined. The investing public will know about that later. The various steps involved are before the U. S. District Court, in Chicago, for consideration. DuPont shares have as fine a record with investors as any on the market.

**Q.** Would you recommend the purchase of American Electronics?

**A.** I wouldn't reach for it. Two important acquisitions recently boosted its price. There is talk around it may seek equity financing. I think the safest policy would be to wait until this is out of the way.

**Q.** Do you consider Minnesota & Ontario Paper a buy?

**A.** The entire paper industry got in trouble toward the close of 1957 because of excess capacity. This led to softness in prices. Minnesota & Ontario is a completely intergrated producer of newsprint and other papers. Reports current in the Street are that last year was not entirely satisfactory for it, or its competitors.

**Q.** In the farm equipment field, do

# MANDELAMINE... HIGHLY ANTIBACTERIAL YET NOT AN ANTIBIOTIC!

Mandelamine is effective against almost all strains of bacteria found in urinary tract infections—even those resistant to antibiotics and sulfonamides. Mandelamine won't sensitize patients...no resistant strains develop...side effects are minimal. And Mandelamine is priced at just a fraction of the cost of other antibacterial agents!

**Available:** In 0.25 Gm. tablets, 0.5 Hafgrams® and pleasantly flavored Mandelamine Suspension for children.

**Dosage:** Adults—initial daily dose of 4 to 6 Gm. Children need as little as 1 Gm. daily. (Mandelamine Discs, for quick identification of Mandelamine-sensitive bacteria, available from your laboratory supply house.)

*Nepera Laboratories, Morris Plains, N. J.*

## MANDELAMINE®

*safe and effective for chronic urinary tract infections*



you consider International Harvester a safe investment?

A. Much depends upon what you regard as safety. If you wish to be assured you will get full face value at some definite date in the future, try United States government bonds. The outlook for farm machinery shares in

general has undergone an improvement. For the speculator they offer a fair run for your money, but if your emphasis is on safety, why enter the stock market at all? Harvester increased its employment by 1,000 in November, and a good part of this was due to its farm machinery line, which enjoyed a nice increase in sales.

## COMMENTS ON THE INVESTMENT FRONT

Authors in the financial community, ever prolific with their views, have submitted a number of brochures, studies, reviews and opinions for the enlightenment of the investment public recently. Among them are the following:

SUBJECT	ISSUING FIRM	FIRM'S N. Y. ADDRESS
The missile program	Hayden, Stone & Co.	25 Broad St.
Review of missile stocks	Rudd, Brod & Co.	734 Fifteenth St.*
Smith-Corona	Carl M. Loeb, Rhodes & Co.	42 Wall St.
DuPont	Dominick & Dominick	14 Wall St.
Schering Corporation	Bache & Co.	36 Wall St.
Lone Star Steel Co.	Shearson, Hammill & Co.	14 Wall St.
Convertible bonds	Hirsch & Co.	25 Broad St.
P. Lorillard Co.	VanAstyne, Noel & Co.	52 Wall St.
Colgate-Palmolive	Weingarten & Co.	551 Fifth Avenue
Safeway Stores, Inc.	Green, Ellis & Anderson	61 Broadway
California Electric Power	Thomson & McKinnon	11 Wall St.
Coca Cola Co.	Harris, Upham & Co.	120 Broadway
Thiokol Chemical	Paine, Webber, Jackson & Curtis	25 Broad St.
British Petroleum	Merrill Lynch, Pierce, Fenner & Beane	70 Pine St.
Northern Pacific Railway	Vilas & Hickey	26 Broadway
General Electric Co.	Orvis Brothers & Co.	15 Broad St.
Municipal bonds	New York Hanseatic Corp.	120 Broadway
Copper outlook	Jacques Coe & Co.	39 Broadway
I.T.E. Circuit Breaker	Amott, Baker & Co.	150 Broadway
Am. Agricultural Chemical	Laird, Bissell & Meeds	120 Broadway
Melville Shoe Corp.	Peter P. McDermott & Co.	42 Broadway
Chrysler Corporation	Evans & Co.	300 Park Ave.
Wilson & Co.	Josephthal & Co.	120 Broadway
Schenley Industries	J. R. Williston & Co.	115 Broadway
C.I.T. Financial	Fahnstock & Co.	65 Broadway
Hoffman Electronics	Joseph Faroll & Co.	29 Broadway

\* Washington, D. C.

## “Functional vomiting

should be carefully distinguished from organic vomiting. Grave consequences may follow if evidences of organic derangement . . . are masked by treatment designed to control vomiting alone.”<sup>1</sup>

SAFE

*Safety First* | in emesis therapy

Prescribe

# EMETROL®

(Phosphorated Carbohydrate Solution)

*First*

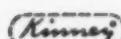
SAFE

EMETROL will not suppress symptoms arising from organic etiology. It controls vomiting of functional origin quickly.

**Dosage:** Adults, 1 or 2 tablespoonfuls; infants and children, 1 or 2 teaspoonfuls, as often as every 15 minutes. Always administer *undiluted*, and forbid oral fluids for at least 15 minutes after each dose. Even if first dose is not retained, continue administration. If vomiting is not controlled within one or two hours, look for organic etiology. For individual dosage regimens in various indications, please send for literature.

1. Bradley, J. E.: *Mod. Med.* 20:94, No. 30, 1952.

SAFE

 Kinney

KINNEY & COMPANY, INC. Columbus, Indiana

## PICTURE A MINUTE

Polaroid Corporation, which has the camera that can develop a picture in a minute, provided a mild sensation in the market in the closing months of 1957. Its former common shares were split four-for-one and the new shares listed on the New York Stock Exchange.

The old shares had sold over the counter as high as \$210. Then they sold off, along with the rest of the market, getting down to the \$130 level. Following the listing the new shares also developed activity, and wide price swings.

The firm of Dreyfus & Co. has had an interest in Polaroid for many years, and its open-end investing company, Dreyfus Fund, has been a large investor in this issue. It has since been joined by other mutual funds that have been impressed with the company's progress.

Dreyfus has prepared the following table of comparative sales and earnings growth of photographic equipment companies. In that connection it com-

ments, "If Polaroid's sales and earnings are compared with Eastman's and Bell & Howell's as we have done, it is quite clear that Polaroid's growth has been due to something more than the growth of the photographic field alone. What is more, from the Polaroid camera and the many improvements going into it, it seems safe to conclude that Polaroid's growth will continue to outstrip that of the fast-expanding photographic business.

"We need not look far to see this. To begin with, there is a feature in Polaroid's operations which almost automatically tends to increase film volume from year to year. For example, in 1958 there will be roughly 35% more camera owners than this year. Consequently, 35% more persons will be in the market for Polaroid film next year.

"A brand new impetus to sales in 1958 is a copying device developed by Polaroid, which enables the owner of a Polaroid camera to get a perfect dupli-

### PHOTOGRAPHIC EQUIPMENT COMPANIES — 1950-1957

YEAR	SALES (000,000)				EARNINGS PER SHARE			
	AS REPORTED				ADJUSTED			
	POLAROID	EAST-MAN	BELL & HOWELL	POLAROID	EAST-MAN	BELL & HOWELL	POLAROID	EAST-MAN
1957	Est. \$44	\$47	\$825	\$50	\$1.40	\$5.15	\$3.85	\$1.40
1956	32	35	762	46	.98	4.89	3.78	.98
1955	24	26	714	42	.64	4.44	3.51	.64
1954	20	24	599	41	.30	3.62	3.20	.30
1953	17	26*	634	30	.37*	2.59	2.44	.39
1952	11	13	575	29	.15	2.37	2.55	.23
1951	7	9	542	22	.12	2.55	2.60	.18
1950	5	6	458	17	.18	3.21	3.20	.10

\* Sharp increase in sales and earnings reflects 1 year, 3-D eyeglasses bonanza.

† As reported by the companies; adjusted only for stock splits and stock dividends.

§ Adjusted to reflect normal taxes, equity in undistributed earnings of unconsolidated subsidiaries, stock distributions, and elimination of non-recurring earnings.



time cures  
colds and flu

while waiting,  
**ROMILAR CF**  
controls  
the symptoms

*as long as the cold or flu continues:*

*subdue the symptoms,*

*control the cough with*

## ROMILAR CF

*The Complete Cold Formula*

ROMILAR CF brings new comfort and ease to your patients with colds and other upper respiratory disorders by providing more complete control of the symptom complex. It combines the benefits of an antihistamine, a decongestant and an analgesic-antipyretic with the effective cough suppressant action of Romilar Hydrobromide—the *non-narcotic* cough specific with codeine's antitussive effect but without codeine's side effects.

Available in syrup or capsule form. One teaspoonful (5 cc) of ROMILAR CF syrup, or one ROMILAR CF capsule, provides:

Romilar Hydrobromide (antitussive).....	15 mg
Chlorpheniramine Maleate (antihistamine).....	1.25 mg
Phenylephrine Hydrochloride (decongestant).....	5 mg
N-acetyl-p-aminophenol (analgesic-antipyretic).....	120 mg

ROMILAR® Hydrobromide—  
brand of dextromethorphan hydrobromide



ROCHE LABORATORIES  
Division of Hoffmann-La Roche Inc.  
Nutley, New Jersey  
*Original Research in Medicine and Chemistry*

# EPILEPSY



dramatic  
control  
of  
seizures

Samples of the electroencephalogram of galant, before and during treatment with DIAMOX

## DIAMOX\*

ACETAZOLAMIDE LEDERLE

Administered by mouth to 126 patients with various forms of epilepsy, many of whom were refractory to standard therapy, DIAMOX gave practically complete control of seizures in 34 cases, 90-99% reduction of seizures in an additional 12 cases, 50-90% in 22 cases, less than 50% in 58 cases. Diet was not restricted. *In at least half of the patients benefited, DIAMOX was used alone.*

In no cases was the condition made worse. No serious abnormalities of blood, urine, or bone were observed during treatment, *which was maintained over periods from three months to three years.*

Measures having a beneficial influence on

epileptic seizures often involve certain drawbacks. In contrast, DIAMOX is simple to administer, has a wide margin of safety, produces a smaller systemic acidosis, has *an effect that is surprisingly well-sustained.*

A highly versatile drug, DIAMOX has also proved singularly useful in other conditions, including cardiac edema, acute glaucoma, obesity, premenstrual tension, toxemias and edema of pregnancy.

Supplied: Scored tablets of 250 mg., Syrup containing 250 mg. per 5 cc. teaspoonful.

I. Lombroso, C. T., Davidson Jr., D. T., and Grossi-Bianchi, M. L.: Further Evaluation of Acetazolamide (DIAMOX) in Treatment of Epilepsy. J.A.M.A. 160: 268-272, 1956.

LEDERLE LABORATORIES DIVISION, AMERICAN CYANAMID COMPANY, PEARL RIVER, NEW YORK

\*Reg. U.S. Pat. Off.

Lederle

cate of his picture on the spot in one minute. At present it is necessary to send away to the company for duplicates. The copying device, scheduled to be brought out next year at an estimated price of \$30-\$35, eliminates this problem. The device should be bought by many present Polaroid camera owners, as well as providing an added incentive to prospective camera buyers.

"A further factor likely to help 1958 business is the hoped-for introduction of the long-awaited extremely fast film. This film with speeds ranging from 3,000 ASA to 5,000 ASA compares with speeds of 200 ASA to 400 ASA in Polaroid's regular line. With the new film, pictures can be taken in almost any available room light without using a flash bulb."

### FOR THOSE SEEKING INCOME

The action of the stock market the last few months has been disturbing to all investors. Possibly with the thought of cheering us up, the third annual report of Incorporated Income Fund pointed out that the recent low prices have produced a market in which yields are far more attractive than they were not too long ago. That is certainly true, if we assume earnings will keep up so present dividends can be maintained.

"Indeed, prices in our view," observed the management in its report,

"are such that stocks of many leading corporations, some with good growth possibilities, have become attractive investments for current income."

For 1958 the mutual fund expects consumer spending will remain at a high level and that there will be record state and local spending. Federal expenditures, it is estimated, will be higher than expected because of increased defense outlays. "The economy should operate at a satisfactory rate," the fund stated.

### SOME HAVE PASSED THEIR LOWS

Union Service Corporation, which provides investment research and administration for Tri-Continental Corporation, Broad Street Investing, National Investors and Whitehall Fund, Inc., prepared a study last month of group movements of stock market prices and came up with the conclusion that some have already passed their low points. It holds to this opinion even though the general market averages may continue to decline.

The group movements studied go back to the end of 1953. In the opinion

of the Service it "reveals that the general averages obscure the highly diverse results of individual industry groups of stocks."

"The timing of the highs of individual groups has been spread widely over the period," the report noted, "with the result that it was more important to recognize when the highs of the individual groups were being made than to be governed by general market considerations.

This may also be true of the low points, and many groups may have

**In secondary bacterial complications  
of viral upper respiratory infections**

pneumococcal invaders

streptococcal invaders

susceptible staphylococcal invaders



# PEN-VEE • *Oral*®

Penicillin V, Crystalline (Phenoxymethyl Penicillin), Wyeth



Philadelphia, Pa.

This advertisement conforms to the Code for Advertising of the Physicians' Council for Information on Child Health

**Oral Penicillin with Injection Performance**

completed their readjustments and be in a rising trend before the general stock price averages have reached their lows."

"With the record of the high prices of individual groups varying so widely," the report stated in amplification, "it is reasonable to expect the lows—while perhaps not to be so widely

spread—to show considerable time differences from the lows indicated by the general market averages.

This carries the implication that one should not concentrate on endeavoring to determine the exact low of the 'market', but should concentrate on the problem of which individual groups have reached or passed their low points."

### \$25 A WEEK

A portfolio of common stocks that would yield \$25 weekly, assuming that present dividend rates are continued, was prepared recently by Standard & Poor's. It shows the number of shares

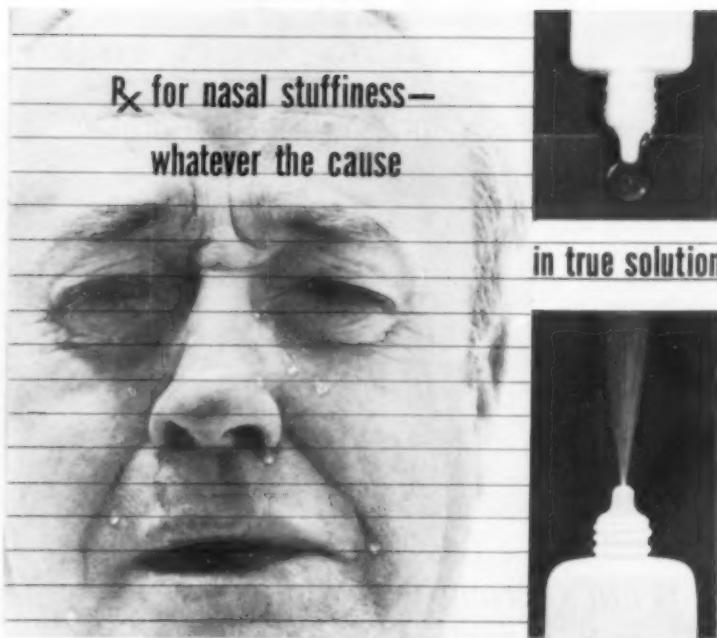
of thirteen stocks that would have to be held. Prices given in the table are as of mid-December. The total investment would be \$28,082.

The table follows:

### PORTRFOLIO YIELDING \$25 WEEKLY

	SHARES NEEDED TO PROVIDE \$25 WEEKLY	INVESTMENT EACH ISSUE	APROX. PRICE	YIELD	EARNS. 1956	\$ PR SH 1957
PENNEY (J. C.) . . . . .	33	\$2,772	84	5.1%	5.68	6.00
AMER. TEL. & TEL. . . . .	11	1,859	169	5.3	13.16	13.25
*GUARANTY TRUST . . . . .	31	2,046	66	5.5	4.71	5.15
OTIS ELEVATOR . . . . .	50	2,150	43	4.7	3.10	3.50
ILLINOIS POWER . . . . .	67	1,943	29	5.2	2.00	2.00
UNION OIL OF CALIF. . . . .	42	1,890	45	5.3	4.45	4.75
AMERICAN CAN . . . . .	50	1,950	39	5.1	2.90	3.25
CONSUMERS POWER . . . . .	42	1,890	45	5.3	3.33	3.35
BORDEN CO. . . . .	42	2,646	63	4.4	5.01	5.30
GRACE (W. R. & CO.) . . . . .	42	1,806	43	5.6	4.41	3.75
SOUTHERN NATURAL GAS . . . . .	50	1,900	38	5.3	2.35	2.40
PITTSBURGH PLATE GLASS . . . . .	45	3,300	74	3.7	5.62	5.50
BENEFICIAL FINANCE . . . . .	100	1,900	19	5.3	1.76	1.90

\* Over-the-counter (Check Blue Sky Laws). E—Estimated.



JUST 2 SPRAYS\* OF

# NEO-HYDELTRASOL®

Prednisolone 21-phosphate with Propadrine®, Phenylephrine, and Neomycin

**PROVIDE**—the most valuable and most soluble of the topical steroids—prednisolone 21-phosphate (2000 times more soluble than hydrocortisone, prednisone or prednisolone), with phenylephrine and Propadrine® plus neomycin

for prompt, persistent and potent anti-inflammatory, antibiotic, decongestant action, to help re-establish normal drainage, breathing and mucosal function and at the same time actively combat secondary bacterial infection.

\***DOSAGE:** as spray—2 sprays into each nostril every 2-3 hours.  
as drops—2 or 3 drops every 2-3 hours (invert bottle).

**SUPPLIED:** in 15 cc. plastic spray bottles.

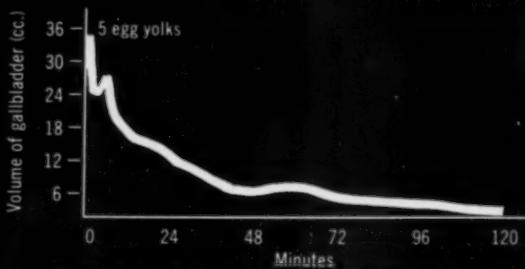


**MERCK SHARP & DOHME** • Division of MERCK & CO., INC., Philadelphia 1, Pa.

# AN AMES CLINIQUICK

CLINICAL BRIEFS FOR MODERN PRACTICE

## "EMPTYING" OF GALLBLADDER AFTER FATTY MEAL®



Adapted from Wright, S. Applied Physiology, ed. 3. London, Oxford University Press, 1947, p. 734.

## *What's wrong with the term "emptying of the gallbladder"?*

The gallbladder discharges bile by fractional evacuation. It is not emptied completely at any one time even following a fatty meal.

Source—Lichtman, S. S.: Diseases of the Liver, Gallbladder and Bile Ducts, ed. 3, Philadelphia, Lea & Febiger, 1953, vol. 2, p. 1177.

*routine physiologic support for "sluggish" older patients*

**DECHOLIN®** one tablet t.i.d.  
therapeutic bile

*increases bile flow and gallbladder function—combats bile stasis and concentration... helps thin gallbladder contents.*

*corrects constipation without catharsis—prevents colonic dehydration and hard stools... provides effective physiologic stimulant.*

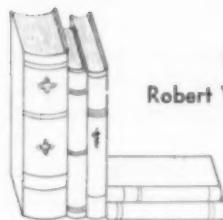
DECHOLIN tablets (dehydrocholic acid, AMES) 3 1/4 gr. Bottles of 100 and 500.



AMES COMPANY, INC. • ELKHART, INDIANA  
Ames Company of Canada, Ltd., Toronto

4455

## Medical Book News



Edited by

Robert W. Hillman, M.D.

### Practical Cytology

**Cytologic Techniques. For Office and Clinic.** By H. E. Nieburgs, M.D. New York, Grune & Stratton, [c. 1956]. 8vo. 233 pages, illustrated. Cloth, \$7.75.

This short volume (233 pages) brings together in a brief, orderly fashion established technics for the collection, fixation and preparation of material for the identification of malignant cells. With the expanding use of cytologic methods in cancer diagnosis, the book fills a definite need. The validity of the results of most laboratory procedures is dependent upon the manner in which the material is collected and prepared. This, perhaps, is particularly true in cytology where the minutiae of cellular structure, needed for correct evaluation, are readily distorted or masked by improper technic. While it contains much information that will be helpful to the cytologic laboratory, it is particularly recommended to the clinician who is finding an ever increasing field of application for cytologic technics.

PHILIP G. CABAUD

(Vol. 86, No. 1) January 1958

### Dermatology

**Dermatology.** By Donald M. Pillsbury, M.D., Walter B. Shelley, M.D., and Albert M. Kligman, M.D. Philadelphia, W. B. Saunders Company, [c. 1956]. 8vo. 1,331 pages, illustrated. Cloth, \$20.00.

The authors have departed from the traditional textbook style of presenting cutaneous disease and have written a modern factual encyclopedia.

For a better understanding of the subject, some 100 pages are devoted to the structure and functions of the skin, with a summary in bold type at the end of most chapters. The style of presentation is lucid and based on recent advances in dermatological investigation. A pleasing feature here is the profuse, clear, black and white pictures.

In the classification of skin diseases, a major project, a new approach has been followed. Diseases are grouped etiologically. Where this is unknown, then one may find the disease listed either according to its morphology or to the portion of skin involved. Nomenclature is simplified by the omission of multiple synonyms.

The authors have availed themselves of many monographs of special interest, particularly on allergy and hypersensitization, metabolic diseases and lipoidosis, viral and rickettsial diseases of the skin.

The text on the common skin condi-

121a

# The Roentgen Aspects Of The Papilla And Ampulla Of Vater

By

MAXWELL H. POPPEL, M.D.  
HAROLD G. JACOBSON, M.D.  
ROBERT W. SMITH, M.D.

This is a complete presentation of the roentgenologic survey of the anatomy, physiology and pathological states of the Vaterian region. It brings integration and meaning into a complex subject by presenting an inclusive affirmation approach not heretofore attempted.

The abnormalities of adjacent structures (notably the duodenum) are considered. This is especially important in formulating correct differential diagnosis.

Roentgenologically considered, what are the criteria for appraising any given major papilla or Vaterian ampulla as normal or abnormal? The answer cannot be found in the existing roentgen literature so the authors have searched for the answer and set down their findings.

The approach is roentgen study from the basic anatomic (postmortem) and from the practical (*in vivo*) standpoints. The microscopic pathological findings obtained from surgical specimens and from autopsy material served as a bridge of explanation for those roentgen findings which did not conform to the normal basic anatomical types (including variants).

211 pages 150 illustrations

**\$8.50, postpaid**

**CHARLES C. THOMAS • Publisher**  
Springfield, Illinois

tions is complete and well illustrated. Pathological findings are noted only when they are specific. On controversial matters the authors take a positive stand. X-Ray therapy is not advised in the treatment of benign dermatoses. It is the opinion of the authors that pemphigus vulgaris has a specific histologic picture.

The older drugs and obsolete methods of management have been replaced by modern practical and proven remedies.

The chapters on hereditary and psoriasis diseases should make interesting reading even to the nondermatologist.

The student or dermatologist will find here a text that can be highly recommended.

ARTHUR M. PERSKY

## Endocrinology

**Ciba Foundation Colloquia on Endocrinology. Vol. 9. Internal Secretions of the Pancreas.** Editors for Ciba Foundation, G. E. W. Wolstenholme, M.D. & Cecilia M. O'Connor, B.Sc. Boston, Little, Brown & Co., [1956]. 8vo. 292 pages, 100 illustrations. Cloth, \$7.00.

The ninth Ciba Foundation Colloquia on Endocrinology is devoted to the *Internal Secretions of the Pancreas*. This book is a collection of seventeen papers. The world's foremost investigators present their data and after each paper the informal criticism and remarks of the other authorities are recorded.

This is no volume for the physician seeking immediate clinical application of recent physiologic experiments. However, it will remain a valuable source book for students of the experimental

—Continued on page 124a

MEDICAL TIMES

*In bronchial asthma therapy—  
prompt effect,  
lasting relief*



# SUS-PHRINE

AQUEOUS EPINEPHRINE SUSPENSION 1:200  
for subcutaneous injection

... because of the slow absorption of the portion in suspension and rapid absorption of the portion in solution, numerous clinical reports emphasize these advantages of Sus-Phrine in the treatment of bronchial asthma:

- is as prompt as the subcutaneous aqueous solution<sup>1,2</sup>
- is more prolonged than the intramuscular oil suspension<sup>2,3</sup>
- is a simple subcutaneous injection<sup>2,4</sup>
- may be easily self-administered by the patient<sup>2,3</sup>
- well-tolerated by children<sup>1,3,4</sup>

Supplied in 5 cc. vials and packages of 12,  
0.5 cc. ampuls.  
Reprints listed below and sample on request.

*Brewer*  
Est. 1852

Brewer & Company, Inc., Worcester 8, Massachusetts, U.S.A.

1. Levin, S.: J. Ped. Clin. of N.A., 1:975 (1954).
2. Naterman, H.L.: J. of Allergy, 20:64 (1953).
3. Unger, A.H., and Unger, L.: Ann. of Allergy, 10:128 (1952).
4. Jenkins, C.M.: J. Nat. Med. Assn., 45:120 (1953).

## MEDICAL BOOK NEWS

—Continued from page 122a

approach to the understanding of factors controlling carbohydrate metabolism.

MARTIN PERLMUTTER

### Cerebral Physiology

**The Organization of the Cerebral Cortex.** By D. A. Sholl. London, Methuen & Co., (New York, John Wiley & Sons), [1956]. 8vo. 125 pages, illustrated. Cloth, \$4.25.

It would not appear, initially, that the author could review the huge organization of the mammalian cerebral cortex in so brief a text as this. Yet, through sensible simplification and re-

sponsible omissions, he has accomplished his task.

Each major school of thought is analyzed against the accepted base of knowledge concerning the cerebral tissues. The more recent cybernetic explanations are adequately discussed; and even the recently evolved machines capable of performance similar to that of the mammalian cortex are reviewed, although there is no evidence of analogy between the modes of operation of the machines and that of the brain.

What begins as a pedestrian review of cerebral microanatomy, ends as an exciting discussion of the dynamic mechanics of cerebral function. An excellent bibliography is available at the back of the text.

S. M. ARONSON

—Concluded on page 126a

PUBL. AUG. 1954

2ND EDITION

## LEGAL MEDICINE PATHOLOGY AND TOXICOLOGY

By THOMAS A. GONZALES, M.D., MORGAN VANCE, M.D.,  
MILTON HELPERN, M.D., and CHAS. J. UMBERGER, Ph.D.

This highly authoritative text presents the scientific methods and procedures used in the personnel of the Office of The Chief Medical Examiner in New York City for medicolegal investigations of deaths due to accidental or planned violence or poisoning deaths due to natural but unknown causes, or deaths which occur under suspicious circumstances. It is based on experience gained in the handling of more than 20,000 such cases yearly.

It covers such a wide variety of subjects as investigation at the scene of death; identification; signs of death; the technic of autopsy; unexpected and sudden natural death; types and complications of trauma; blunt force injuries; stab wounds; bullet wounds; traumatic and gas asphyxia; thermic trauma; pregnancy; illegitimacy; abortion; infanticide; virginity; impotence; examinations of semen, blood, hair and other material; clinical examination for organic, inorganic and miscellaneous poisons; rights and obligations of physicians; malpractice; insanity; insurance and survivorship; and a technical section of analytic methods for determining the presence of and identification of various poisons.

2ND EDITION. AUG. 1954 1370 PAGES. 658 ILLUSTRATIONS. \$22.00

**APPLETON-CENTURY-CROFTS, INC.**

(Publishers of THE NEW CENTURY CYCLOPEDIA OF NAMES)  
35 WEST 32nd STREET, NEW YORK 1, N. Y.

If  
Monilial  
overgrowth  
is a factor

# ACHROSTATIN V

Combines ACHROMYCIN V and NYSTATIN

ACHROSTATIN V combines ACHROMYCIN<sup>†</sup> V...  
the new rapid-acting oral form of  
ACHROMYCIN<sup>†</sup> Tetracycline... noted for its  
outstanding effectiveness against more than  
50 different infections... and NYSTATIN... the  
antifungal specific. ACHROSTATIN V provides  
particularly effective therapy for those  
patients who are prone to monilial overgrowth  
during the protracted course of  
antibiotic treatment.

**supplied:**

ACHROSTATIN V CAPSULES  
contain 250 mg.  
tetracycline HCl  
equivalent (phosphate-  
buffered) and 250,000  
units NYSTATIN.

**dosage:**

Basic oral dosage (6-7 mg.  
per lb. body weight per  
day) in the average  
adult is 4 Capsules of  
ACHROSTATIN V per day,  
equivalent to 1 Gm. of  
ACHROMYCIN V.

\*Trademark

†Reg. U. S. Pat. Off.



LEDERLE LABORATORIES DIVISION, AMERICAN CYANAMID COMPANY, PEARL RIVER, NEW YORK

## MEDICAL BOOK NEWS

—Continued from page 124a

### Cardiology

**Treatment of Heart Disease. A Clinical Physiologic Approach.** By Harry Gross, M.D. & Abraham Jezer, M.D. Philadelphia, W. B. Saunders Co., [c. 1956]. 4to. 549 pages, illustrated. Cloth, \$13.00

The authors in their preface raise the question, "Why Another," book on cardiology. This reviewer had the same query. He found on close scrutiny that the material presented is based on sound principles and the most recent investigative work. The problems encountered in diuretic therapy and electrolyte dis-

turbance are well handled. The authors take the position that anti-coagulants should be given only in exceptional situations i.e., in the presence of shock or heart failure, associated peripheral vascular disease, varicose veins or a history of thromboembolic disease and when precordial pain is recurring. One of the most valuable features of the book may be the appendix containing diets, menus and recipes and table of sodium and potassium contents. This reviewer concludes that this book on *Treatment of Heart Disease* is a worth while addition to the literature because it contains the most recent conclusions concerning many of the problems that confront the practicing physician.

EDWIN P. MAYNARD, JR.

If storks were  
really helpful...

...they'd  
surely deliver

**White's**  
**Vitamin A & D**  
**Ointment**

A daily necessity  
in the house where baby lives

Soothes and  
Softens Skin  
for baby

Hastens Healing  
for mother

SUPPLIED: 1 1/2 and 4 oz. tubes;  
1 lb. jars and 5 lb. containers.

WHITE Laboratories, INC. Kenilworth, N.J.



**AGE . . .** In older people, chronic constipation and biliary dyspepsia are often the result of decreased food and water intake, inactivity, intestinal muscle atonicity, increased anorectal disorders, biliary stasis.

## for biliary dyspepsia and constipation

**OCCUPATION . . .** Among the sedentary workers, chronic constipation and impaired digestion are often the result of lack of exercise which retards normal peristaltic action in the gastrointestinal tract.



Tablets of Caroid and Bile Salts with Phenolphthalein are specifically formulated to provide a 3-way, comprehensive approach to the problem of impaired digestion and elimination.

- 1. **CHOLERETIC**
- 2. **DIGESTANT**
- 3. **LAXATIVE**

Bile salts stimulate biliary flow for improved fat emulsification while Caroid steps up protein digestion up to 15%. Gentle stimulant laxatives induce formed, easily passed stools.

For patients who cannot or will not be managed by diet and exercise, Caroid and Bile Salts helps establish normal physiological patterns.

*samples available on request*

AMERICAN FERMENT COMPANY, INC., 1450 BROADWAY, NEW YORK 18, N. Y.

**CAROID® AND BILE SALTS Tablets**

# MODERN THERAPEUTICS

## Management of Vitamin D Resistant Rickets

Daeschner reported his experience with 8 patients with rickets refractory to the usual doses of vitamin D. Reporting in *Texas St. J. Med.* [53:324 (1957)], the author indicated that this condition can be distinguished from achondroplastic bone disease by means of the levels of serum inorganic phosphorus, alkaline phosphatase, and calcium.

As soon as diagnosis is made, treatment should be started with concentrated vitamin D. Children should be started on doses of 200,000 units of vitamin D daily and the dose should be increased or decreased by 50,000 units at 6-week intervals as indicated by serum calcium and inorganic phosphate levels or by evidence of toxicity or hypercalcemia. Promotion of initial healing may require 300,000 to 1 million units a day. After 3 to 9 months of adequate therapy, evidences of hypercalcemia or mild toxicity may appear. This suggests that healing is nearly complete. The dosage should then be lowered to  $\frac{1}{3}$  to  $\frac{1}{4}$  the therapeutic dose during the remainder of the period of epiphyseal growth.

Toxicity from excessive amounts of vitamin D may occur in these patients. It is characterized by polyuria, thirst, headache, and anorexia. If the serum calcium rises above 11.5 mg./100 ml., vitamin D should be omitted for 7 to 10 days and then restarted at a lower dose.

## Free and Esterified Vitamin A in Blood Plasma

The degree of clinical vitamin A deficiency is best diagnosed by measuring the vitamin A content of the blood. The free form is the most significant indicator. The esterified form is of no significance since it remains unchanged in deficiency states, according to Takai, Mino, and Kishi in *J. Vitaminol.* [3:13 (1957)].

In 49 apparently healthy subjects, 82.6 per cent of the total plasma vitamin A was in the free form and 17.4 per cent in the esterified form. The authors reported that the dividing line between sufficiency and deficiency is not clear but less than 70 I.U. of the free form per 100 ml. of plasma definitely indicates a deficiency and requires immediate vitamin A supplementation.

## Ataractics for the Control of Anxiety in Patients with Heart Disease

Ataractics should be used to allay the anxiety frequently associated with heart disease, according to Waldman and Pelner in *Am. Pract. and Digest of Treat.* [8:1075 (1957)]. Meprobamate was used in 80 patients with various forms of acute heart disease. The tranquilizer was used to relieve symptoms of situational anxiety not considered to

—Continued on page 130a

# NOTABLY SAFE AND EFFECTIVE INHALATION ANALGESIA

# "Trilene"

Brand of trichloroethylene U.S.P. (Blue)

SELF-ADMINISTERED WITH THE  
"Duke" University Inhaler

No. 3160 Model-M

With the "Duke" University Inhaler, "Trilene" analgesia can be self-administered by the patient, adult or child, under medical supervision, with a relatively wide margin of safety. Induction of analgesia is usually smooth and rapid. Inhalation is automatically interrupted if unconsciousness occurs. Outpatients can generally leave the doctor's office or hospital within 15 to 20 minutes.

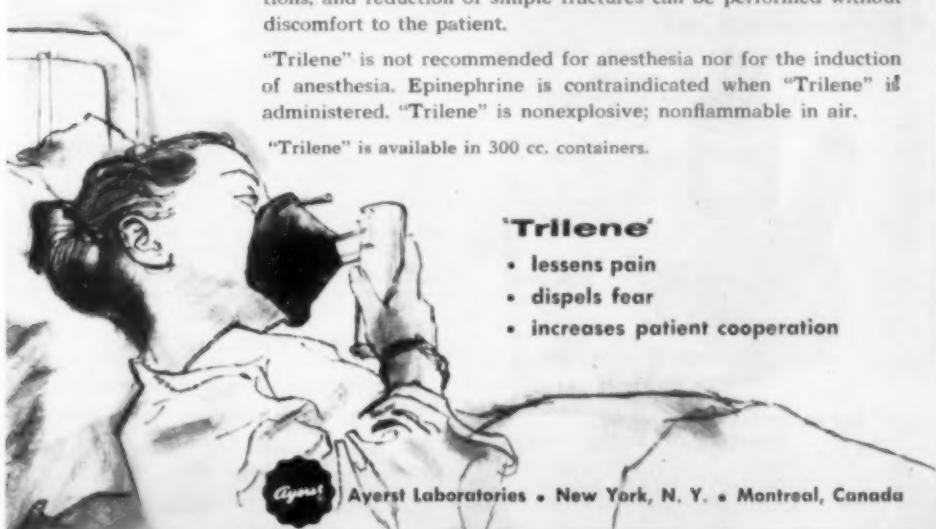
In Obstetrics . . . Self-administered "Trilene" will usually give effective relief of pain throughout labor and, for delivery, it may be employed in association with pudendal block or low spinal anesthesia.

In Pediatrics . . . The "Duke" University Inhaler is so easy to operate that even a child can administer his own "Trilene" analgesia.

In Surgery . . . With "Trilene," self-administered, many so-called "minor" yet painful procedures such as biopsies, suturing of lacerations, and reduction of simple fractures can be performed without discomfort to the patient.

"Trilene" is not recommended for anesthesia nor for the induction of anesthesia. Epinephrine is contraindicated when "Trilene" is administered. "Trilene" is nonexplosive; nonflammable in air.

"Trilene" is available in 300 cc. containers.



## 'Trilene'

- lessens pain
- dispels fear
- increases patient cooperation

Ayerst

Ayerst Laboratories • New York, N. Y. • Montreal, Canada

Ayerst Laboratories make "Trilene" available in the United States by arrangement with Imperial Chemical (Industries) Limited.

## RAPID in DESTRUCTION

of commonly encountered  
VEGETATIVE BACTERIA  
Free from Phenol (Carbolic Acid)  
and Mercurials

BARD-PARKER

## CHLOROPHENYL

This Powerfully Efficient  
Instrument Disinfecting Solution  
for WARD—OFFICE—CLINIC IS . . .

**Non-corrosive to metallic instruments  
and keen cutting edges**

**Non-injurious to skin or tissue**

**Free from unpleasant-irritating odor**

**Non-toxic—stable for long periods**

**Potently effective even in the  
presence of soap**

**Inexpensive to use**



*Ask your  
dealer*

**PARKER, WHITE & HEYL, INC.**  
Danbury, Connecticut

**ALL BARD-PARKER SOLUTIONS  
CONSERVE THE BUDGET DOLLAR**

## MODERN THERAPEUTICS

—Continued from page 128a

be caused by the underlying ailment. The authors found the drug entirely satisfactory in causing the patients to become more amenable to therapy for the heart ailment.

In those conditions where there was extensive coronary thrombosis and the outcome was considered to be inevitably fatal, the tranquilizing drug had no effect on the progress of the disease.

### Some Aspects of Modern Drug Therapy

"Persons who have just taken antihistamines should not drive a car any distance or engage seriously in any activity which involves depth perception," according to Dr. John M. Sheldon, Professor of Internal Medicine at the University of Michigan and Chief of the Allergy Service at the University Hospital. In spite of the value of these drugs, their action is infrequently stimulative, but usually sedative, hence the admonition applicable principally to truck drivers and airplane pilots.

The Doctor pointed out the increased understanding of the use of the cortical steroids. These drugs if not prescribed with discretion may increase the patient's susceptibility to infection. There is a tendency, also, for the demineraliza-

### WHO IS THE DOCTOR?

The doctor is Francois Rabelais; his characters are Gargantua and Pantagruel.

*(from page 59a)*

MEDICAL TMIES

tion of bone followed by spontaneous fractures.

The value of some of the newer bronchial relaxing drugs which are replacing ephedrine and adrenalin was pointed out, but some of the types of poison ivy-extract drugs should receive further study and development.

The Doctor commended the work that is being done toward the reduction of side-effects in many of the new drugs.

#### Oral Penicillin Studied at Creighton

A grant of \$2,100 from the Eli Lilly & Co. for the study of oral penicillin has been received by the Department of Pediatrics at Creighton University School of Medicine. This will finance a study of the blood levels and blood counts of premature and infants in relation to the use of oral penicillin.

#### Hormone Therapy for Acne Vulgaris

Being aware of an etiological relationship between hormones and acne, the authors, Douglas Torre and M. M. Klumpp of New York [Journal of the American Medical Association, 164: 1447 (1957)] conducted a study to determine the therapeutic efficacy of natural estrogens, administered orally in the postovulatory phase of the menstrual cycle, on patients with acne, since there seems to be evidence that androgens aggravate and estrogens ameliorate acne. The condition usually is less severe in the midportion of the menstrual cycle when estrogen levels are highest, and exacerbations occur premenstrually when estrogen levels decrease. In pregnancy, when estrogen levels are high, acne is usually absent or much less

—Continued on page 134a



when the patient's cold or 'flu is complicated by bacterial infection

#### Novahistine® with penicillin capsules

- opens clogged air passages
- combats secondary bacterial invasion

Each Novahistine with Penicillin Capsule contains:  
Phenylephrine hydrochloride ..... 10.0 mg.  
Propenpyridamine maleate ..... 12.5 mg.

for the "Novahistine Effect"

Penicillin G Potassium ..... 200,000 units  
for potent antibiotic action when penicillin-susceptible bacteria are secondary invaders

PITMAN-MOORE COMPANY

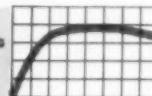
 Division of Allied Laboratories, Inc.  
Indianapolis 6, Indiana



*announcing...*

# Novahistine LP\* tablets

LONG-ACTING  
PRINCIPLE



patients with  
colds...sinusitis  
...rhinitis will  
appreciate the  
"Novahistine  
LP Effect"

*When a patient begins breathing freely in a few minutes...with all air passages cleared...and this relief continues for as long as 12 hours after a single dose...he is experiencing the "Novahistine LP Effect."*

This "Effect" is produced by phenylephrine hydrochloride, a quick-acting, orally effective sympathomimetic, combined with chlorprophenylpyridamine maleate, a potent histamine antagonist for synergistic decongestive action...on all mucous membranes of the respiratory tract.

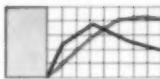
Each Novahistine LP Tablet contains:  
Phenylephrine hydrochloride.....20 mg.  
Chlorprophenylpyridamine maleate.....4 mg.

Supplied in bottles of 50 tablets.

\* Trademark



**continuous relief of  
respiratory congestion for  
as long as 12 hours with  
a single dose**



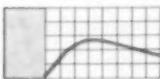
**PROMPT RELIEF**

Novahistine LP Tablets start releasing medication almost as rapidly as a solution.



**CONTINUOUS RELEASE**

Novahistine LP releases its decongestive drugs at a constant rate in both acid and alkaline media . . . assuring patients continuous relief whether the tablet is in the stomach or intestine.



**SAFE RELIEF**

With Novahistine LP there is no sudden "over-release" . . . no uneven, sporadic effects.

And easy to use, oral dosage eliminates patient misuse of nose drops, sprays and inhalants . . . is not likely to produce rebound congestion, mucosal damage and ciliary paralysis, nor make the patient "jittery."

**Administration:** Adults—2 tablets twice daily will provide an adequate therapeutic effect in the average patient. In resistant cases, a third daily dose may be indicated and can be safely given. Children over six—one-half the adult dose.



**PITMAN-MOORE COMPANY**

DIVISION OF ALLIED LABORATORIES, INC., INDIANAPOLIS 6, INDIANA

## MODERN THERAPEUTICS

—Continued from page 131a

*and...in colds  
complicated by  
useless, exhausting  
coughs*



### **Novahistine-DH\***

(fortified Novahistine with dihydrocodeinone)

When "head colds" become "chest colds" Novahistine-DH promptly controls coughs and keeps air passages of both head and chest clear of obstruction.

Each teaspoonful (5 cc.) of grape flavored Novahistine-DH contains:

Phenylephrine hydrochloride	10 mg.
Prophenvyramine maleate	12.5 mg.
Dihydrocodeinone bitartrate	1.66 mg.
Chloroform (approx.)	13.5 mg.
I-Menthol	1.0 mg.

Supplied in pint and gallon bottles.

\*Trademark



PITMAN-MOORE COMPANY  
DIVISION OF ALLIED LABORATORIES, INC.  
INDIANAPOLIS 6, INDIANA

severe. A preparation of conjugated estrogenic substances (Premarin) was selected because of its relative freedom from side-effects, such as nausea and vomiting, sometimes found with synthetic preparations. Dosage must be individualized, but the average daily dose was 3.9 mg., and the duration of treatment was about nine months. The drug was given only for the 14 days prior to the expected day of the menses. Of 21 patients, results were good in seven and satisfactory in nine. In a second series of 42 patients, the results were good in 24 and satisfactory in 13, with only a slight response in five. It was noted that patients with evidence of estrogenic hormone deficiency required larger doses than those with apparently normal ovarian function. Surprisingly few side-effects were encountered. The results showed that estrogens administered during the postovulatory phase of the menstrual cycle are of value in the treatment of acne.

### **Viadril as an Anesthetic Agent**

Viadril was administered intravenously to 1,000 patients by the authors, F. Paul Ansboro and his associates of Brooklyn, N. Y. and Lawrence, Mass. [Journal of the American Medical Association, 164:163 (1957)]. Before beginning their investigation, the literature concerning the anesthetic activity of the steroids was carefully reviewed. These compounds are capable of producing an "anesthetic state" without any manifestation of hormonal activity. Viadril seemed to offer certain advan-

—Continued on page 138a

MEDICAL TIMES



## *“Doctors can’t help shingles?”*

Physicians who have used PROTAMIDE extensively deplore such statements as unfortunate when they appear in the lay press. They have repeatedly observed in their practice quick relief of pain, even in severe cases, shortened duration of lesions, and greatly lowered incidence of postherpetic neuralgia when PROTAMIDE was started promptly. A folio of reprints is available. These papers report on zoster in the elderly—the severely painful cases—patients with extensive lesions. PROTAMIDE users know “shingles” can be helped.

# PROTAMIDE®

*Sherman Laboratories*  
Detroit 11, Michigan

*Available: Boxes of 10 ampuls—prescription pharmacies.*



*Presenting...an advance in  
the treatment of VAGINITIS*

# TRICO

VAGINAL SUPPOSITORIES AND POWDER

*a new specific  
moniliacide*

**MICOFUR**<sup>TM</sup>  
BRAND OF NIFUROKIME

*now added to  
the established  
specific  
trichomonacide*

**FUROXONE®**  
BRAND OF FURAZOLIDONE



# IMPROVED FURON®

Rapid relief of burning and itching often within 24 hours

**85% CLINICAL CURES\*** In 219 patients with either trichomonal vaginitis, monilial vaginitis, or both, clinical cures were secured in 187.

**71% CULTURAL CURES\*** 157 patients showed negative culture tests at 3 months follow-up examinations.

Eliminates malodor

Esthetically acceptable, non-irritating

Simple two-step treatment swiftly brings relief and control of vaginal moniliasis and trichomoniasis.

**STEP 1** Office administration of TRICOFURON VAGINAL POWDER [Micofur 0.5% (anti 5-nitro-2-furaldoxime), the new nitrofuran fungicide, and Furoxone 0.1% in an acidic water-soluble powder base]. Applied by the physician at least once a week, except during menstruation.

For easy insufflation: plastic insufflator of 15 Gm., supplied with 3 sanitary disposable tips. Also available: glass bottle of 30 Gm.

**STEP 2** Continued home use to maintain moniliacidal-trichomonacidal action: TRICOFURON VAGINAL SUPPOSITORIES [Micofur 0.375% and Furoxone 0.25% in a water-miscible base]. Employed by the patient each morning and night the first week and each night thereafter—through one cycle, especially during the important menstrual days.

Box of 12, each hermetically sealed in green foil.

\*Combined results of 12 clinical investigators. Data available on request.

NITROFURANS ... a new class of antimicrobials ...  
neither antibiotics nor sulfonamides

EATON LABORATORIES, NORWICH, NEW YORK

## MODERN THERAPEUTICS

—Continued from page 134a



### **Meets all 3 objectives for care of coughs**

**with 1 single herbal ingredient**

In treating coughs and respiratory disorders three objectives are essential: (1) Control of the cough impulse; (2) Stimulating natural respiratory tract fluid; (3) Increasing ciliary activity.

Pertussin fulfills all three of these requirements with one single herbal ingredient . . . thyme! The pharmacodynamic influence of Pertussin supplies such necessary therapeutic elements . . . yet it contains no opiates, bromides, coal-tar derivatives or depressants. It is an ideal vehicle for other medications. Non-constipating. Equally effective for children and adults.

We will gladly send you a personal supply of Pertussin as well as enough for a few of your favorite patients. For your free supply, simply clip this advertisement and mail it together with your name and address to:

**SEECK & KADE**

Division of Chesebrough - Pond's Inc.  
Department 1  
440 Washington St., New York 13, N.Y.

tages over the other steroids. The average dose was a 0.5 per cent solution in 5 per cent of dextrose and water; the majority of patients received 1 to 1.5 Gm. The speed of infusion, usually in a vein in the forearm, varied between three and nine minutes. The drug takes effect in about three minutes. Viadril was used in both major and minor surgical procedures. The degree of anesthesia produced was not sufficient for intubation and maintenance without the aid of muscle relaxants and inhalation anesthetics. The usual effect on the cardiovascular system was an early but moderate fall in systolic pressure, with a narrowing of the pulse pressure that lasted from five minutes to half an hour. No severe cardiac arrhythmias were noted. Tachycardia was present in nearly all cases, accompanied in some instances, by extrasystoles. The most objectionable effects were on the respiratory system which showed bizarre and varied patterns. Bradypnea and apnea were frequently encountered, and there was one case of tachypnea. Viadril did not sensitize the pharyngeal reflexes, and it was found most frequently useful as a supplement to regional anesthesia, in which it produced satisfactory unconsciousness, and permitted the insertion of an airway without arousing undesirable reflexes. In this respect, its utility in head and neck surgery should be considered.

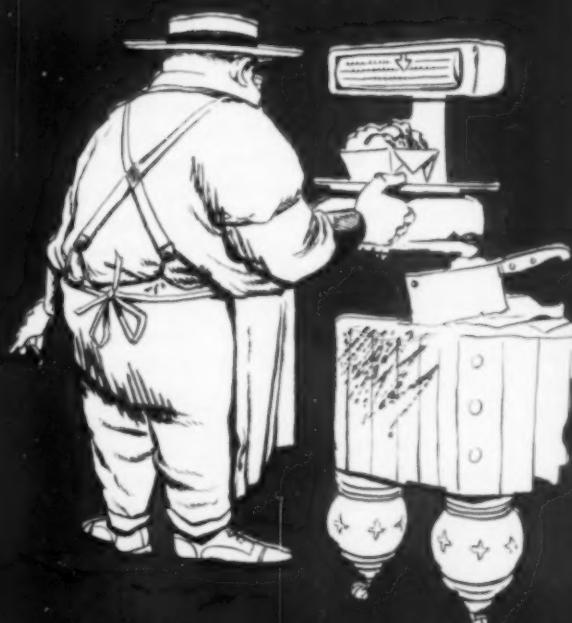
### **The Effect of Isoniazid on Tuberculous Meningitis**

After examining case histories of persons with tuberculous meningitis dating

—Continued on page 140a

**MEDICAL TIMES**

The  
High  
Price  
of  
Fat ....



...is the price your patient pays in heart disease, hypertension, arteriosclerosis—and the many other hazards of obesity.

In addition to suppressing the obese patient's appetite—

# SYNDROX®

Methamphetamine Hydrochloride

helps to make life look brighter. It keeps morale up and food intake down.

Syndrox Tablets (5 mg.)  
Elixir (5 mg. per 5 cc.)

**McNEIL**

LABORATORIES, INC. • PHILADELPHIA 32, PA.

## MODERN THERAPEUTICS

—Continued from page 138a

back to 1943, the author, William Weiss and his co-workers [Journal of the American Medical Association, 164:947 (1957)] noted mortality figures in three groups: (1) the era prior to specific therapy, (2) the period after 1948 when streptomycin and aminosalicylic acid (PAS) were used, and (3) results after 1953 when isoniazid was added to the therapeutic armamentarium. In the first group there were no survivals; in the second group of 79 patients, the mortality rate was 84 per cent; after the use of isoniazid, the figure was 54 per cent. Isoniazid seems to have certain advantages over other drugs: it is the most potent antituberculosis agent available;

the molecule is small and diffuses readily; it is as effective against intracellular tubercle bacilli as it is against extra cellular organisms; it has a low degree of toxicity; it may be administered orally or intramuscularly, and it has definite prophylactic value in that tuberculous meningitis does not usually occur during the course of treatment of other forms of tuberculosis. It was noted that the addition of isoniazid had no effect on the mortality rate for patients over 41 years of age, that it was moderately effective in the case of young adults, and markedly effective in children. Some of the factors related to the effectiveness of isoniazid appear to be age, race, and sex. Fatalities were greater among Negroes, and among males. It is apparent that the drug has a powerful impact on tubercu-

—Continued on page 142a

### In treating the constipated patient

... therapy should be directed toward symptomatic relief as well as control of often coexistent biliary disease and faulty absorption. Patients suffering with biliary or hepatic disorders in whom there is a decrease in the flow of bile are generally constipated.

**Past  
40**

## CHOBILE®

Chobile is a logical treatment for biliary constipation. It increases motility of the intestinal tract, helps prevent stool dehydration by maintaining colon water balance. Each Chobile tabule contains 1½ gr. Cholic acid plus 1½ gr. Ketocholanic acids.

**Neisler**

Irwin, Neisler & Co.

• Decatur, Illinois

minor  
chemical  
changes  
can mean  
major  
therapeutic  
improvements



# Medrol\*

## The most efficient of all anti-inflammatory steroids

Supplied: Tablets of 4 mg., in bottles  
of 30, 100 and 500.

\*TRADEMARK FOR METHYLPREDNISOLONE, UPJOHN

- Lower dosage  
( $\frac{1}{3}$  lower dosage  
than  
prednisolone)
- Better tolerated  
(less sodium  
retention, less  
gastric irritation)

For  
complete information, consult  
your Upjohn representative,  
or write the Medical Department,  
The Upjohn Company,  
Kalamazoo, Michigan.

**Upjohn**

## MODERN THERAPEUTICS

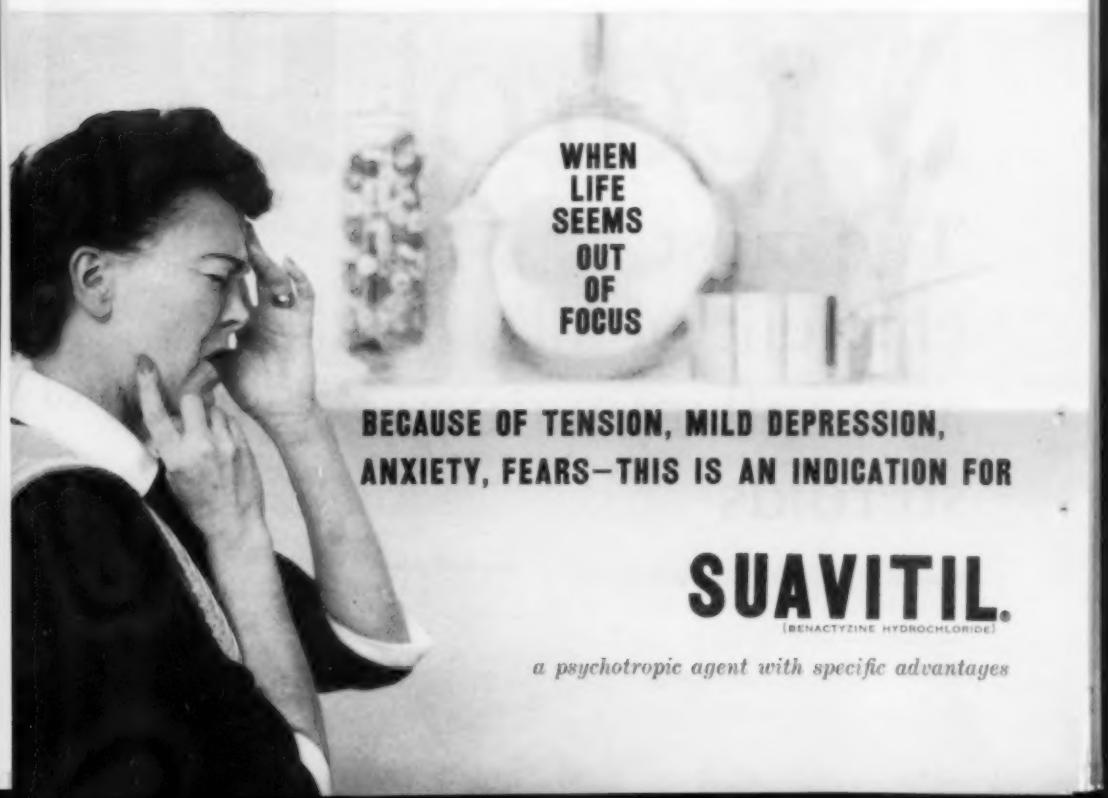
—Continued from page 140a

lous meningitis. Several other agents have been used in conjunction with it, but, in view of the excellent results achieved with isoniazid alone, it is difficult to evaluate the effects of these additional agents.

### **Meprobamate in Premenstrual Tension**

While administering meprobamate (Miltown) to psychiatric patients, the author, V. M. Pennington of Whitfield, Mississippi [Journal of the American Medical Association, 164:638 (1957)] noticed that women suffering from premenstrual disturbances appeared to receive relief while taking the drug. For this reason, 42 nonpsychotic patients

who suffered from premenstrual symptoms were given Miltown. Twenty-eight patients were instructed to begin taking one 400-mg. tablet of meprobamate at the first premenstrual symptom, and to continue taking one tablet after each meal until the symptoms subsided. Medication was then discontinued until the next period when the symptoms reappeared. Fourteen patients were advised to take one meprobamate tablet after each meal daily for two months, and then intermittently when premenstrual symptoms began. A placebo was substituted for meprobamate for one month in every case. With the exception of three patients who claimed partial relief from the placebo, the symptoms returned in full force in the other women. Miltown relieved the premenstrual symptoms in 78 per cent of the patients. There was also marked improvement in family,



WHEN  
LIFE  
SEEMS  
OUT  
OF  
FOCUS

BECAUSE OF TENSION, MILD DEPRESSION,  
ANXIETY, FEARS—THIS IS AN INDICATION FOR

**SUAVITIL.**  
(BENACTYZINE HYDROCHLORIDE)

*a psychotropic agent with specific advantages*

social, and business relationships ascribed to a lessening of emotional tensions. The remainder of the women were greatly benefited; symptoms were milder and much less disabling. Improvement and relief from the two methods of dosage were comparable. However, taking the medicament when indicated by symptoms seemed to be the method of choice. No habituation to the drug and no withdrawal symptoms occurred. The complete lack of toxicity and side-effects when given in moderate dosage appear to make meprobamate an ideal drug for repeated use in premenstrual tension.

#### **Meprobamate in the Treatment of Rheumatic Diseases**

Meprobamate (Miltown) is frequently classified as an ataraxic or tranquilizing drug. However, Richard T. Smith and his associates of Philadel-

phia [*Journal of the American Medical Association*, 163: 535 (1957)] question this grouping, since they consider its activity more pronounced as a muscle relaxant which brings about relief of tension and excitation. It would appear that the pharmacologic actions of the drug are ideally suited to treatment of rheumatic diseases and, more particularly, of fibrosites. Treatment with Miltown has been reported by the authors on a group of 252 patients with various rheumatic diseases, but with a predominance of fibrotic symptoms. In the group were patients with rheumatoid spondylitis, cervical root syndrome, rheumatoid arthritis, osteoarthritis, torticollis, muscle spasm, and subdeltoid bursitis. Meprobamate was administered three or four times a day as a 400-mg. tablet. The dosage was reduced to one-half tablet if any evidence of intoler-

## **RESTORE PERSPECTIVE WITH MILDLY ANTIDEPRESSANT SUAVITIL.**

Gently, gradually, without euphoric buffering, SUAVITIL helps patients recover normal drive and helps free them from compulsive fixations.

**RECOMMENDED DOSAGE:** 1.0 mg. t.i.d. for two or three days. If necessary this dosage may be gradually increased to 3 mg. t.i.d.



**MERCK SHARP & DOHME**

DIVISION OF MERCK & CO., INC., PHILADELPHIA 1, PA.





## NEW LIQUID, ASPIRIN-LIKE ANALGESIC & ANTI PYRETIC DROPSPRIN®

Prescribe DROPSPRIN wherever and whenever the patient will not or cannot swallow aspirin tablets. Especially convenient for infants, children and geriatric patients for whom tablet medication is difficult.

DROPSPRIN is a pleasantly flavored milky suspension containing 1 gr. salicylamide per each 1cc. DROPSPRIN is completely miscible with water, milk or fruit juices. DROPSPRIN may be used for "active q.s."ing" in place of inert syrups or elixirs in order to add degrees of analgesia.

*Indications and dosage:*  
Same as for aspirin.

*Supplied:* Bottles—1 oz. and 2 oz. with dropper calibrated at 0.5cc. and 1.0cc.

Samples and literature  
available upon request

**MARTIN H. SMITH CO.**

131 East 23rd St., New York 10, N. Y.

144a

ance was observed. Results were classed as "excellent" if there was evidence of muscle relaxation within 30 minutes, and as "good" if only minimal symptoms of stiffness persisted after 60 minutes. Coming within these categories were 26 of 29 patients with rheumatoid spondylitis; 74 of 85 patients with fibrositis; 28 of 34, with cervical root syndrome; 30 of 38, with rheumatoid arthritis; nine of 14, with torticollis (response was best if the drug was administered soon after the onset of symptoms); 23 of 27 patients with muscle spasm, and both patients with subdeltoid bursitis. Side-effects were not serious; in 85 per cent of the patients they consisted of drowsiness. The drug was discontinued in ten patients because of nausea, vomiting, exhaustion, over-

—Continued on page 146a

### WHAT'S YOUR VERDICT?

*(From page 35a)*

The Court of Appeals of New York affirmed the decision of the trial court. "The main object sought to be accomplished in this case was the care and treatment of the patient. It was not for blood or iodine or bandages for which the plaintiff bargained, but the wherewithal of the hospital staff and facilities to provide whatever medical treatment was considered advisable. The furnishing of blood was only an incidental and secondary adjunct to the services performed by the hospital and, therefore, was not within the provisions of the Sales Act."

Based on decision of  
Court of Appeals of New York

MEDICAL TIMES

This advertisement conforms to the Code for Advertising of the Physicians' Council for Information on Child Health.



*cow's milk allergy?*

when confronted with one or more *symptoms* of cow's milk allergy...

*eczema, asthma, persistent rhinitis, hyperirritability, colic, diarrhea, vomiting (pylorospasm), cough, nasal stuffiness*

1

2

3

continued feeding of a MULL-SOY formula ensures effective *therapy* and sound nutrition

trial replacement with MULL-SOY permits rapid, rational, and "painless" diagnosis



**MULL-SOY®**

now as easy and pleasant to use as evaporated milk... in 15½-fl.oz. tins at all drug outlets. Also available—MULL-SOY Powdered, in 1-lb. tins.

THE BORDEN COMPANY PRESCRIPTION PRODUCTS DIVISION  
330 MADISON AVENUE, NEW YORK 17 • MULL-SOY • BREMIL • DRYCO • BETA LACTOSE • KLIM

# The facts behind the Burton, Parsons label\*



**COMPOSITION** . . . Coating of blond psyllium refined to unique particle size and dispersed in lactose and dextrose.

**RATIONALE** . . . Supplies bulk, consisting of naturally occurring hemi-celluloses which disperse with intestinal contents to form a softly compact, well formed stool of physiological consistency.

**INDICATIONS** . . . Chronic constipation, non-specific diarrheas, following ano-rectal surgery, and whenever normal stools are desirable.

**CONTRAINDICATIONS** . . . Intestinal obstruction of organic origin.

**DOSAGE** . . . 3-4 t.i.d. in glass of water, milk, or fruit juice (palatability unsurpassed).

For clinical trial sample packages,  
send to

**BURTON, PARSONS & COMPANY**  
Manufacturers of Fine Hydrophilic Cellulose  
WASHINGTON 6, D.C.



stimulation, rash, and sluggishness of the small intestine. The side-effect of drowsiness has utility in patients who are overactive and nervous; they are slowed down to a more normal pace. Many patients who had difficulty in sleeping because of hyperexcitability, agitation and nervousness found that one tablet of Miltown at bedtime assured a night of restful sleep.

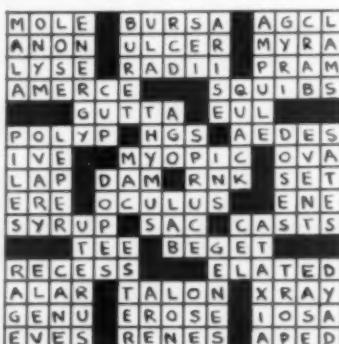
## Erythromycin Ophthalmic Ointment

One per cent erythromycin (Erythrocin) ophthalmic ointment was used for external ocular afflictions in 147 patients, such as catarrhal conjunctivitis, dacryocystitis, keratitis, blepharoconjunctivitis, and hordeolum. The authors, J. W. Hallett and I. H. Leopold of Philadelphia [American Journal of Ophthalmology, 44: 519 (1957)], who conducted the study, instructed that the ointment be instilled into the affected eye four times daily. Adjuvant topical medication was avoided except for non-

—Continued on page 150a

## MEDICAL TEASERS

Solution to puzzle on page 53a



MEDICAL TIMES

# WHY SENSITIZE

*in topical and ophthalmic infections*

# USE 'POLYSPORIN'

POLYMYXIN B-BACITRACIN OINTMENT

brand

*to insure broad-spectrum therapy  
with minimum allergenicity*

For topical use: in  $\frac{1}{2}$  oz. and 1 oz. tubes.

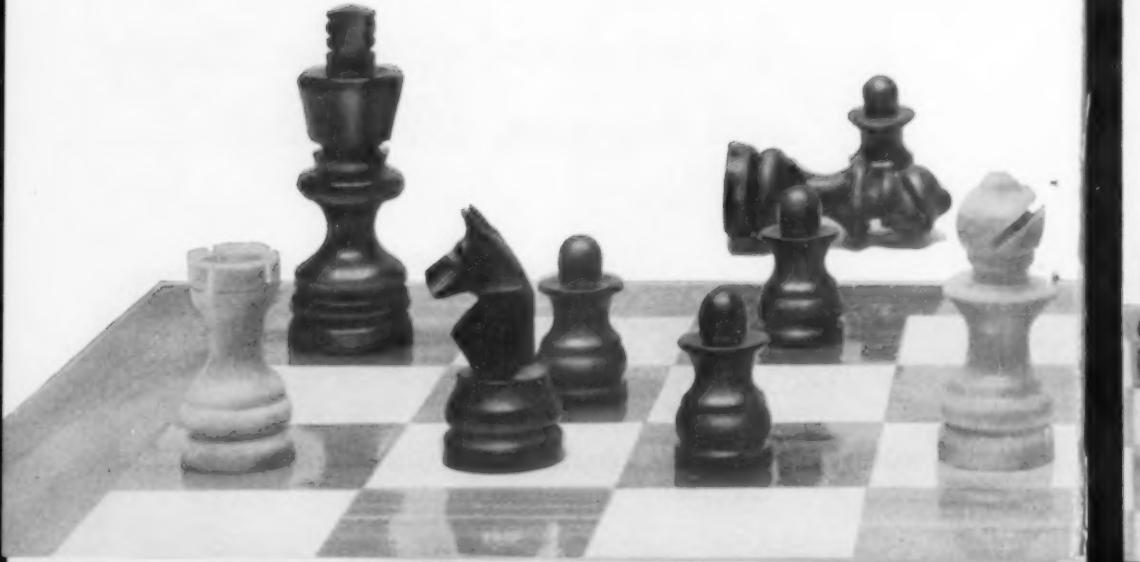
For ophthalmic use: in  $\frac{1}{4}$  oz. tubes.



BURROUGHS WELLCOME & CO. (U.S.A.) INC., Tuckahoe, N. Y.

# decisive action in stress

SPARINE is recommended for use in that portion of the Stress Spectrum requiring the action of a potent, relatively nontoxic drug to return the patient toward normal. SPARINE has caused no liver damage, no parkinsonian-like syndrome, and but rare instances of blood dyscrasia.



**STRESS SPECTRUM:** EPS demonstrates that there is a Wyeth normotropic drug for each of the three great segments of this spectrum. Thus, the physician now has a specific drug for nearly every patient undergoing mental or physical stress.

**EQUANIL in the Stress Spectrum:** EQUANIL, anti-anxiety factor with pronounced muscle relaxing properties, for simple anxiety, tension, skeletal muscle spasm, muscular tension.

**PHENERGAN in the Stress Spectrum:** PHENERGAN, for obstetrical and pre- and postoperative use. Psychic sedative with anti-emetic and antihistaminic properties; produces quiescence and potentiates CNS depressants, thus reducing dosage requirements for narcotics, analgesics, and sedatives.

**SPARINE in the Stress Spectrum for:**

apprehension and  
pain in medical  
emergencies  
hiccups

acute and chronic  
psychoses  
senile agitation  
alcoholism  
hallucinations  
delirium tremens

withdrawal from  
alcohol,  
narcotics,  
and other  
addicting drugs

Supplied: Injection—50 mg. per cc., vials of 2 and 10 cc. For intramuscular or intravenous use. Tablets—10 mg. (green), bottles of 50; 25 mg. (yellow), 50 mg. (orange), 100 mg. (pink), and 200 mg. (red), bottles of 50 and 500. Syrup—10 mg. per 5 cc., bottles of 4 fl. oz.

*Comprehensive literature available on request*

# Sparine®

HYDROCHLORIDE

Promazine Hydrochloride, Wyeth



EQUANIL®, PHENERGAN® HCl†, SPARINE® HCl—A  
Wyeth normotropic drug for nearly every patient under stress

\*Meprobamate, †Promethazine Hydrochloride, Wyeth



Philadelphia 1, Pa.



## MODERN THERAPEUTICS

—Continued from page 146a

specific measures. Duration of treatment was a variable factor, largely dependent upon the co-operation of the patient, and upon his reappearance for final clinical evaluation. The average length of treatment varied between five and fourteen days. The ointment was applied to 47 eyes following removal of corneal foreign bodies, chalazions, small lid growths, aberrant cilia, or after lacrimal probing. No undue reaction or secondary infection was encountered. Nineteen other patients had the ointment instilled for one to eight days prior to intraocular or strabismus surgery without the occurrence of postoperative infection. Of the 147 cases, seven patients experienced untoward reactions

severe enough to cause cessation of treatment. Itching and edema were primary complaints. No effort was made to rule out possible allergenicity of the ointment base rather than that of the antibiotic. From their observations, the authors believe that erythromycin ointment, one per cent, is of value in acute ocular infections, particularly those due to gram-positive bacteria.

### Response of Early Schizophrenia to Azacyclonol

A number of reports have appeared in the literature regarding the effects of azacyclonol (Frenquel) when administered to disturbed patients, but none had specifically mentioned schizophrenia. In order to observe the effects of the drug, a study of patients classed as schizophrenics was undertaken by George D.

—Continued on page 154a

NOSE COLD

HEAD COLD

MISERABLE COLD

**PHENAPHEN® PLUS**

Available on prescription only.

Robins

each coated tablet contains: Phenaphen  
Phenacetin (3 gr.) . . . . . 194.0 mg.  
Acetylsalicylic Acid (2½ gr.) . . . . . 162.0 mg.  
Phenobarbital (4 gr.) . . . . . 16.2 mg.  
Hyoscyamine Sulfate . . . . . 0.031 mg.  
plus  
Prophenpyridamine Maleate . . . . . 12.5 mg.  
Phenylephrine Hydrochloride . . . . . 10.0 mg.

But surely...  
the lady will be dainty

- Massengill Powder has a "clean" antiseptic fragrance. It enjoys unusual patient acceptance.
- Massengill Powder is buffered to maintain an acid condition in the vaginal mucosa. It is more effective than vinegar and simple acid douches.
- Massengill Powder has a low surface tension which enables it to penetrate into and cleanse the folds of the vaginal mucosa.
- Massengill Powder solutions are easy to prepare. They are nonstaining, mildly astringent.



*when recommending  
a vaginal douche*

## massengill® powder

### INDICATIONS:

Massengill Powder solutions are a valuable adjunct in the management of monilia, trichomonas, staphylococcus, and streptococcus infections of the vaginal tract. Routine douching with Massengill Powder solution minimizes subjective discomfort and maintains a state of cleanliness and normal acidity without interfering with specific treatment.

*Currently, mailings will be forwarded only at your request.  
Write for samples and literature.*

**The S. E. MASSENGILL Company**

BRISTOL, TENNESSEE  
NEW YORK SAN FRANCISCO KANSAS CITY

*In modern feminine hygiene  
and therapy*

# massengill powder

The clean, refreshing fragrance of Massengill Powder is acceptable to the most fastidious for therapeutic or routine hygienic use. Solutions are easily prepared, convenient to use, nonstaining. They effectively cleanse, deodorize and soothe the vaginal mucosa, while their mild astringent properties tend to decrease vaginal secretions.

#### CLEAN-UP AFTER ANTIBIOTICS

Following intensive antibiotic therapy, many female patients complain of vulvar pruritus or vaginitis, and profuse vaginal discharge. Most of these present the classical picture of *Monilia albicans*, *Trichomonas vaginalis* or mixed infections. When these infections occur, regular use of Massengill Powder, with its pH of 3.5 to 4.5, helps restore the normal acidity of the vaginal tract. At this normal pH the growth of pathogenic organisms is inhibited and the growth of the normal vaginal flora encouraged.<sup>1</sup>

#### LOW pH RETENTION

Massengill Powder is buffered to retain an acid condition. In a recent study, ambulatory patients—with an alkaline vaginal mucosa resulting from pathogens—maintained an acid vaginal mucosa of pH 3.5 for a period of 4 to 6 hours after douching with Massengill Powder; recumbent patients maintained a satisfactory acid condition up to 24 hours. Simple acid douches are quickly neutralized by an alkaline vaginal mucosa, and are unsatisfactory in maintaining the required acid pH of the vagina.<sup>2</sup>

#### LOWER SURFACE TENSION

Massengill Powder in the standard solution has a surface tension of 50 dynes/cm. as compared to that of water and simple acid solutions with 72 dynes/cm. This added property enables Massengill Powder to penetrate into and cleanse the folds of the vaginal mucosa, thus increasing the therapeutic effectiveness. Lowered surface tension makes the cell wall and cytoplasmic membrane of the infecting organism more permeable and more susceptible to specific therapy.<sup>3</sup>

#### SUPPLY

Massengill Powder is supplied in glass jars of the following sizes:

Small, 3 oz.  
Medium, 6 oz.  
Large, 16 oz.  
Hospital Size, 5 lbs.

Pads of douching instructions for patient use available on request.

#### REFERENCES

1. Lang, W.R., Rakoff, A.E., Am. Geriatrics Soc. 1:520 (1953).
2. Arnot, P.H., The Problem of Douching, Western Journal of Surg., Obs., and Gyn., Vol. 62, No. 2:85 (1954).

**The S. E. MASSENGILL Company**

BRISTOL, TENNESSEE  
NEW YORK SAN FRANCISCO KANSAS CITY

This unique formulation assures faster and more certain control of urinary tract infections, by providing comprehensive effectiveness against whatever sensitive organisms may be involved. Indicated in the treatment of cystitis, urethritis, pyelitis, pyelonephritis, ureteritis and prostatitis due to bacterial infection. Also before and after genitourinary surgery and instrumentation, and for prophylaxis.

*In each AZOTREX Capsule:*

TETREX (tetracycline phosphate complex) ... 125 mg.

Sulfamethizole ..... 250 mg.

Phenylazo-diaminopyridine HCl ..... 50 mg.

Min. adult dose: 1 cap. q.i.d.

## tract infections

*tetracycline-sulfonamide-analgesic action*

**otrex**<sup>TM</sup>  
CAPSULES

## brighten the day

for the "always tired" mother..

**Ritalin**<sup>®</sup> hydrochloride  
(methyl phenylacetate hydrochloride CIBA)

...mild antidepressant, unrelated to amphetamine, brightens outlook and renews vigor — with little or no effect on appetite or blood pressure.

C I B A SUMMIT, N.J.

## brighten the day

for the depressed psychoneurotic

**Ritalin**<sup>®</sup> hydrochloride  
(methyl-phenylacetate hydrochloride CIBA)

...mild antidepressant, unrelated to amphetamine, brightens outlook and renews vigor — with little or no effect on appetite or blood pressure.

C I B A SUMMIT, N.J.

## MODERN THERAPEUTICS

—Continued from page 150a

Scott of Kingston, Ontario [Canadian Medical Association Journal, 77: 323 (1957)]. Frenquel was given in the form of a 20-mg. tablet three times a day; the patients were observed for periods of at least one year. Results showed that patients with schizophrenia of long-standing failed to respond to Frenquel in most instances. However, marked benefit was noted in the early schizophrenic, the so-called "prepsychotic schizoid" with such symptoms as increased introspection to the point of preoccupation with self-values; a difference in interpretation of environmental relationships; ill-defined ideas of reference; over-concern about health, and physical complaints of a functional nature. Out of 34 of these patients, 24 of them attained satisfactory improvement. Frenquel appears to have a beneficial effect in certain early schizophrenic conditions where ill-defined delusions exist prior to the appearance

—Continued on page 156a

## Diagnosis, Please

### ANSWER

(from page 29a)

### NEUROTROPHIC JOINT

Note marked disorganization, fragmentation, eburnation and malalignment, associated with overall enlargement of the joint.



Give your patient that extra lift with "Beminal" Forte

Whenever high vitamin B and C levels are required—  
**"Beminal"® Forte with Vitamin C**

Each capsule contains:

Thiamine mononitrate (B <sub>1</sub> ) .....	25.0 mg.	Calc. pantothenate .....	10.0 mg.
Riboflavin (B <sub>2</sub> ) .....	12.5 mg.	Vitamin C (ascorbic acid) .....	150.0 mg.
Nicotinamide .....	75.0 mg.	Vitamin B <sub>12</sub> with intrinsic factor	
Pyridoxine HCl (B <sub>6</sub> ) .....	3.0 mg.	concentrate .....	1/9 U.S.P. Unit

Supplied: No. 817—Bottles of 100 and 1,000 capsules.



Ayerst Laboratories • New York 16, N. Y. • Montreal, Canada

## MODERN THERAPEUTICS

—Continued from page 154a

of auditory hallucinations. The drug reduces the patient's sensitivity to his problem. Benefit may be noted immediately, or after some weeks of oral therapy. A delayed response was seen in those patients suffering from ill-defined delusions of reference alone. The response was immediate in those patients who were experiencing vague hallucinatory perceptions in addition to their ideas of reference.

According to Dr. Scott's report, Frenquel is a valuable adjuvant in psychotherapy because it reduces the intensity of the delusionary and hallucinatory fabric and allows the patient to maintain a meaningful contact with reality. Frenquel is not a sedative, and has no unpleasant side reactions. It can be valuable to the general practitioner in

handling early schizoid syndromes, and is useful in psychiatric practice in preparing the patient for intensive psychotherapy by restoring a meaningful relationship with reality.

### Closed Circuit Use of Halothane

Reports have appeared in the literature on the open or semi-open administration of halothane (Fluothane). The author, H. Rex Marrett, Anesthetist at the Coventry and Warwickshire Hospital [British Medical Journal, 2: 331 (1957)] reports its use in a closed circuit. Anesthesia was induced 1,550 times during a nine-month period using a standard Marrett apparatus. Anesthesia was characterized by a smooth induction, excellent relaxation without the need of relaxants, and a minimal amount of post-operative nausea, vomiting or shock. This anesthesia proved particularly useful for minor procedures

—Continued on page 158a

when anxiety and tension "erupts" in the G. I. tract...

## IN GASTRIC ULCER



## PATHIBAMATE\*

Meprobamate with PATHILON® Lederle

Combines Meprobamate (400 mg.) the most widely prescribed tranquilizer . . . helps control the "emotional overlay" of gastric ulcer — without fear of barbiturate loginess, hangover or habituation . . . with PATHILON (25 mg.) the anticholinergic noted for its extremely low toxicity and high effectiveness in the treatment of many G.I. disorders.

Dosage: 1 tablet t.i.d. at mealtime. 2 tablets at bedtime.

Supplied: Bottles of 100, 1,000.



LEDERLE LABORATORIES DIVISION, AMERICAN CYANAMID COMPANY, PEARL RIVER, NEW YORK

\*Trademark

® Registered Trademark for Tridihexethyl Iodide Lederle



This advertisement contains information for Advertising of the Physicians' Council for Information on Child Health

*As with mother's milk...*

## Proteins

S-M-A contains 1.5 per cent protein, and adequately satisfies the baby's daily requirement for protein.

The important elements in milk protein are the amino acids. S-M-A agrees closely with human milk in its content of these essential substances.

S-M-A protein is complete and adequate.



# S-M-A®

Concentrated Liquid  
Instant Powder

**Wyeth**  
Philadelphia 1, Pa.

*for sound infant nutrition*

## MODERN THERAPEUTICS

—Continued from page 156a

where maximum relaxation is required such as gynecologic examinations and versions, and various endoscopic examinations. Halothane is non-inflammable and safe to use with diathermy. An untoward reaction caused by overdosage may be readily avoided since excellent relaxation is obtained by moderate dosage. The fall in blood pressure caused by halothane is not a hazard unless the blood loss is considerable, or D-tubocurarine has been used. If an unexpected loss of blood occurs during an operation under halothane, the blood must be replaced. When a raw surface has been left, oozing may start when the halothane is turned off. It is sug-

gested, in these instances, that the halothane be turned off for several minutes, the oozing taken care of, then turned on again to produce needed relaxation for closure of the peritoneum; otherwise there is a risk of reactionary hemorrhage. Halothane is most useful for the induction of bad-risk emergency cases because it is non-irritant and the passage through the second stage until the jaw and larynx are sufficiently relaxed for intubation is rapid and tranquil. It is the author's opinion that halothane may be used successfully and safely in a standard closed-circuit apparatus.

### Steroid Therapy in Mumps Orchitis

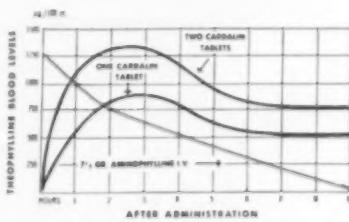
The local inflammation and generalized systemic effects of mumps orchitis were reduced dramatically by treatment

### Orally...higher and more sustained aminophylline blood levels than those produced intravenously

Cardalin utilizes two synergistic protective factors to permit administration of high oral doses of aminophylline without the usual side effects of nausea, gastric irritation and vomiting.

## CARDALIN

... proven effective clinically whenever high blood concentrations of aminophylline are desired...as in congestive heart failure, cardiac edema, paroxysmal dyspnea, angina pectoris, myocardial infarction, heart block and bronchial asthma.



(Adapted from Bickerman, H. A., et al.; Ann. Allergy 11:301, 1953, and Truitt, E. B., Jr., et al.; J. Pharmacol. & Exper. Therap. 100:309, 1950.)

Each Cardalin tablet supplies: Aminophylline, 5.0 gr.; Aluminum hydroxide, 2.5 gr.; Ethyl aminobenzoate, 0.5 gr.

Also available, Cardalin-Phen.

**Neisler**

Irwin, Neisler & Co. • Decatur, Illinois

with hydrocortisone, prednisone and corticotropin. One patient received 20 mg. of hydrocortisone 4 times a day, 2 were given 5 mg. of prednisone 4 times a day, and one patient was given intramuscular injections of 20 mg. of corticotropin every 6 hours followed by gradually decreased doses. Reporting in *Ann. Internal Med.* [46:852 (1957)], Zeluff and Fatherree stated that there was a dramatic response to the steroids in each case, as compared with a large series of mumps orchitis not so treated.

#### **Hypertension Treated with Pentapyrrolidinium**

The danger of drastic lowering of the blood pressure by the powerful autonomic blocking agent, pentapyrrolidinium (AnsolySEN), has led to restraint in its general use. This impression caused H.

Z. Pomerantz and his associates at the Jewish General Hospital, Montreal [*Canadian Medical Association Journal*, 77: 325 (1957)] to test the feasibility of initiating and continuing therapy with this drug in an outpatient department. The patients attending the Hypertension Clinic had been followed for years, and records on them were complete. Sixteen patients were chosen for the study. Initially they were given 20 mg. of pentapyrrolidinium bitartrate orally. If side-effects were minimal or absent, the dosage was gradually increased to 60 mg. the first week, and to larger amounts subsequently. In several instances the daily dosage did not exceed 200 mg.; the general daily average for the group was 300 mg. However, the dosage had to be individualized, and carefully controlled. A reserpine prod-

in convalescence

**M**yadec®  
*one of many indications for*  
**M**yadec®  
high potency vitamin-mineral formula

"Generally, the more rapid and complete the nutritional rehabilitation, the shorter the convalescence."\*

MYADEC Capsules are supplied in bottles of 30, 100, 250, and 1,000.

\*Goodhart, H. S.: Vitamin Therapy Today, *M. Clin. North America* 40:1473, 1956.

PARKE, DAVIS & COMPANY • DETROIT 32, MICHIGAN

uct was usually added at some time in the course of therapy. If the patients felt faint or dizzy, they were advised to lie down for two hours. In no instance was it necessary to discontinue treatment. The duration of therapy was from three months to one year. Results, with one exception, showed the diastolic pressure reduced by from 10 to 55 mm. Hg. Greater lowering of the blood pressure could have been achieved, but at the expense of increased side-effects. The use of pentapyrrolidinium, a powerful autonomic blocking agent, was found by the authors to be feasible, effective, and without untoward side-effects with a carefully controlled dosage.

#### **The Management of Diabetes with Tolbutamide**

In investigating a means of lowering blood sugar, a compound known as carbutamide was used by the authors, J. B. R. McKendry and his associates

[Canadian Medical Association Journal, 77: 429 (1957)]. However, results proved to be somewhat disappointing and the authors changed to a related compound, tolbutamide (Orinase) which had more recently been studied in Europe. One hundred diabetic patients were selected more or less at random. A control period of at least a week was observed before institution of the Orinase. The average daily dose was 1 Gm., but if more than 1.5 Gm. was required, the dose was divided. It is believed to be safer to start with a comparatively small dose of tolbutamide and increase the amount if necessary. Response has been regarded as negative if control was not achieved on 2 Gm. daily. In general, if the insulin requirement is less than 20 units a day, it may safely be stopped and tolbutamide instituted. Results showed that 60 per cent of the group were successfully controlled

—Concluded on page 162a

#### **SATISFACTORY REDUCTION OF GASTRIC SECRETION.**

**OF GASTRIC SECRETION.** Each patient has wide physiological and emotional tolerances to anticholinergics. Malcotran's wide dosage latitude facilitates regulation of your patient's dosage *according to his need, not his tolerance.*

Malcotran assures prompt arrest of gastro-intestinal motility — and reduction of gastric secretion.

## **MALCOTRAN®**

*for peptic ulcer*



PM-73

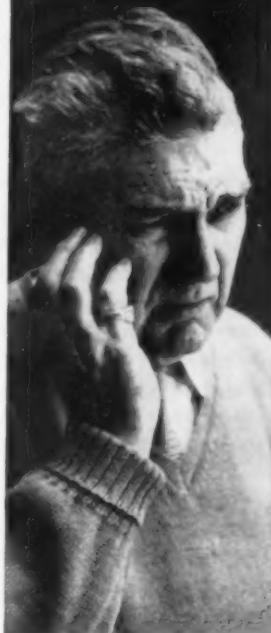
MALTBIE LABORATORIES DIVISION • WALLACE & TIERNAN INC.



fatigue



memory lapses



muscular pain



depression



## for middle-age slowdown

Plestran is indicated as an aid in restoration of vigor in middle-aged or elderly patients who complain of chronic fatigue... reduced vitality... low physical reserve... impaired work capacity... depression... muscular aches and pains... or cold intolerance. Such "signs of aging," far from being due to physiologic disturbances, may often result from endocrine imbalance, especially gonadal and thyroid dysfunction.<sup>1-4</sup> Plestran provides ethinyl estradiol (0.005 mg.); methyltestosterone (2.5 mg.); and Proloid<sup>®</sup> (1/4 gr.)—hormones which help to correct endocrine imbalance and often halt or reverse involutional and degenerative changes.<sup>1-4</sup>

*Plestran restores work capacity and a sense of well-being, usually within 7 to 10 days. It improves nitrogen balance, leads to better muscle tone and vigor, enhances mental alertness,*

•Purified thyroid globulin

helps to correct osteoporosis, senile skin and hair texture changes and relieves muscular pain.

*The anabolic and tonic effects of the hormones in Plestran appear to be enhanced by combination so that small dosages are very effective. Combination also overcomes some of the disadvantages of therapy with a single sex hormone, such as virilization, feminization or withdrawal bleeding.<sup>5</sup>*

**Dosage:** Usually one tablet daily; occasional patients may require two tablets daily, depending on clinical response.

Supplied in bottles of 100 and 500.

**References:** 1. McGavack, T. H.: *Geriatrics* 5:151 (May-June) 1950. 2. Masters, W. H.: *Obst. & Gynec.* 8:61 (July) 1956. 3. Kimble, S. T., and Stieglitz, E. J.: *Geriatrics* 7:20 (Jan.-Feb.) 1952. 4. Kountz, W. B., and Chieffi, M.: *Geriatrics* 2:344 (Nov.-Dec.) 1947. 5. Birnberg, C. H., and Kurzrok, R. J.: *J. Am. Geriatrics Soc.* 3:656 (Sept.) 1955.

**PLESTRAN**  
TRADEMARK  
*a metabolic regulator*

**WARNER-CHILCOTT**

100 YEARS OF SERVICE TO THE MEDICAL PROFESSION

with Orinase with regard to blood sugar levels. The most common side-effect was related to gastrointestinal irritation which could be controlled by dividing the dose. The authors have formulated certain principles for the clinical employment of tolbutamide: it should not be used if the diabetes began before the patient was 20 years old; it should not be used in the presence of severe local or general infection; it is not required if the diabetes can be controlled by diet, and it should not be given to emaciated patients or to those with a chronically poor intake of food, since such persons are prone to severe hypoglycemic re-

actions. The authors believe that high doses of tolbutamide should be used with caution.

### Cancer of the Colon Survey

At Ohio State University, a survey for the detection of malignancy of the colon is being sponsored by the US Public Health Service. The colon is one of the most common cancer sites, and one in which early detection and treatment result in a high percentage of cures. During a three-year period, the investigators expect to examine about 10,000 persons a year at an estimated cost of \$50,000 to \$80,000. Arrangements are being made for the facilities and equipment required for the greatly increased number of sigmoidoscopies to be performed.

In a recent study (1) coitus was made possible in 85% of 67 cases of impotency with the use of 1 cc. of GLUKOR intramuscularly twice weekly, and maintained once weekly or as little as once monthly.

# **IN IMPOTENCE**

**GLUKOR** was effective in 88.5% of patients (2) with impotence, male climacteric, senility, depression, angina and coronary.

1. Gould, W. L.: *Impotence, M. Times* 84:302 Mar. '56.  
2. Personal Communications from 110 Physicians.

ATTACH TO Rx BLANK

## RESEARCH SUPPLIES

297

## PINE STATION, ALBANY, N. Y.

Please send me:— Literature on GLUKOR

10 cc. vial(s) of GLUKOR—\$10.00 each

—25 cc. vial(s) of GLUKOR—\$20.

Name \_\_\_\_\_

Address \_\_\_\_\_

City \_\_\_\_\_ State \_\_\_\_\_

Also — for the female — **GLUTEST** . . . effective in refractory cases where other therapy fails.

## To prevent emotional upsets in cardiovascular conditions

'Compazine', by controlling anxiety and tension, can prevent the emotional upsets that so often play an exacerbating role in cardiovascular conditions. And, 'Compazine' can be depended upon to have little, if any, hypotensive effect.

### Compazine\*



*the tranquilizing agent  
remarkable for its freedom  
from drowsiness and  
depressing effect*

Available: Tablets, Ampuls,  
Spansule® sustained release capsules,  
Syrup and Suppositories.



*Smith Kline & French Laboratories, Philadelphia*

\*T.M. Reg. U.S. Pat. Off. for prochlorperazine, S.K.F.

# NEWS AND NOTES

## Smallpox Vaccination and Skin Disease

Children with eczema can contract a serious and sometimes fatal disease from playmates who have been vaccinated for smallpox, a team of Duke University Medical School pediatricians warns. Eczema vaccinatum is a generalized spread of cowpox. This can occur when a person with eczema or other skin disease comes in close contact with someone who has been vaccinated. Also, a vaccinated person with eczema can contract the disease from his own vaccination.

Terming eczema vaccinatum a "lamentable and preventable disease," the doctors offer these rules for its prevention:

- A person with skin disease should not be vaccinated for smallpox.
- A person who will be in close contact with anyone suffering from skin disease should not be vaccinated.
- A vaccinated person should be considered a danger to anyone with skin disease until the scab has fallen from the vaccination site.

The Duke doctors emphasize that eczema vaccinatum, although serious, is comparatively rare, and that every normal child should receive smallpox vaccination. The Duke study was limited to children; however, adults with skin disease can also contract eczema vaccinatum.

## Hemophilia Center at Michigan

Under the auspices of the University of Michigan, a center for the study and treatment of hemophilia is being organized at its University Hospital. Beside intensive study of the congenital anomaly by a group of specialists, hemophiliacs will receive competent emergency treatment.

## Gifts of the Samuel H. Kress Foundation

The Samuel H. Kress Foundation plans to create a fund to provide for a University Chair of Surgery in the New York University Post-Graduate Medical School to be named after Mr. Rush H. Kress. In addition to the recent pledge of \$5,000,000 toward the complete reconstruction of the former New York Post-Graduate Hospital, the Samuel H. Kress Foundation during the past eight years has given over \$8,000,000 to the Post-Graduate Medical School at New York University.

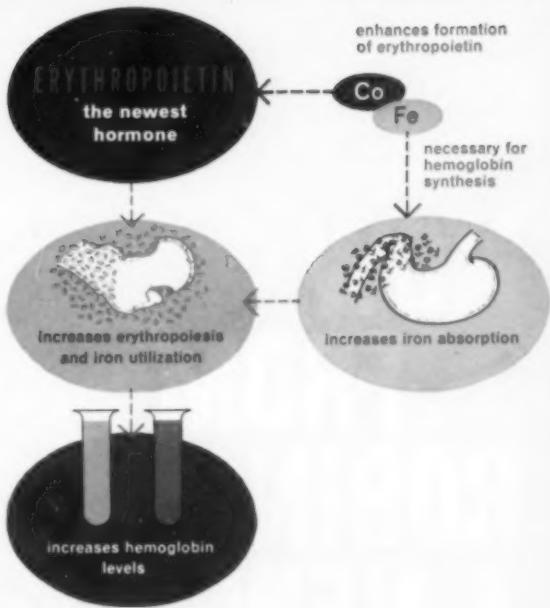
## Dr. Benedict R. Walske Named Associate Professor at Creighton U.

Dr. Benedict R. Walske has been named Acting Director of the Department of Surgery and Head of Surgical Specialties at Creighton University School of Medicine. He will hold the rank of Associate Professor of Surgery, according to Dean Frederick G. Gillick.

—Continued on page 168a

MEDICAL TIMES

NEW  
RESEARCH ON  
ERYTHROPOIETIN  
EXPLAINS  
CLINICAL  
SUPERIORITY OF



# RONCOVITE®-mf

(MODIFIED FORMULA)

IN THE COMMON ANEMIAS

Elucidation of the action of erythropoietin—the erythropoietic hormone—provides a clear explanation for the observations of Holly,<sup>1</sup> Ausman,<sup>2</sup> Tevetoglu<sup>3</sup> and many others who have reported that in the common anemias cobalt-iron therapy results in a clinical response superior to that produced by iron alone.

**Increased Iron Absorption and Utilization**—Recent investigations show that cobalt enhances the formation of erythropoietin.<sup>4,5</sup> This hormone increases the rate of production of new red cells which, in turn, increases the rate of both iron utilization by the marrow and iron absorption from the intestine.<sup>6</sup>

**Clinical Application**—In simple iron deficiency anemia, 89% of patients treated with Roncovite exceeded 12 Gm. of hemoglobin per 100 cc., while only 33% of the same patients treated with iron alone for a comparable period reached this level.<sup>7</sup> In anemia of pregnancy, 98.2% of Roncovite-

treated patients maintained their hematologic status; 63.8% delivered with a hemoglobin of 13 Gm. per 100 cc. or more.<sup>1</sup> In anemia of infancy and childhood an average hemoglobin level of only 8.7 Gm. per 100 cc. was attained with iron alone while the same patients subsequently reached an average hemoglobin level of 11.6 Gm. per 100 cc. with Roncovite.<sup>3</sup>

**Roncovite-MF** is the new therapeutic agent based on erythropoietin formation which translates this new research into the practical utility of full iron effectiveness with greatly decreased, better tolerated iron dosage.

Each enteric-coated, green tablet contains:

Cobalt chloride, 15 mg.  
Ferrous sulfate excised, 100 mg.

**Maximum adult dosage:**

one tablet after each meal and at bedtime.  
Supplied: Bottles of 100 tablets.

Bibliography available on request.

**LLOYD BROTHERS, INC.**  
**CINCINNATI 3, OHIO**

# NOW, FROM ROBINS, A NEW AND UNEXCELLED ANTIHISTAMINE

**why Dīmetane is the best reason yet for you to re-examine the antihistamine you're now using** » *Milligram for milligram, DīMETANE potency is unexcelled.* DīMETANE has a therapeutic index unrivaled by any other antihistamine—a relative safety unexcelled by any other antihistamine. DīMETANE, even in very low dosage, has been effective when other antihistamines have failed. Drowsiness, other side effects have been at the very minimum.

## » unexcelled antihistaminic action

Diagnosis	No. of Patients	Response				Side Effects
		Excellent	Good	Fair	Negative	
Allergic rhinitis and vasomotor rhinitis	30	14	9	5	2	Slight Drowsiness (3)
Urticaria and angioneurotic edema	3	0	1	0	0	Dizzy (1)
Allergic dermatitis	2	0	0	0	0	Slight Drowsiness (2)
Bronchial asthma	1	0	0	0	0	
Puritis	1	0	0	0	0	
Total	37	15	13	7	2	Drowsiness (3) 16.2% Dizzy (1)

From the preliminary Dīmetane Extentabs studies of three investigators. Further clinical investigations will be reported as completed.

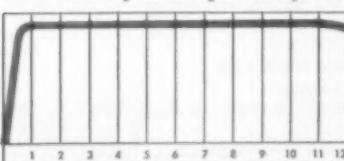


**RIMETANE® EXTENDARS® TABLETS**      **ELEXIN®**

EXTENTABS 12 MG., TABLETS 4 MG., ELIXIR 2 MG. PER 5 CC.

**a blanket of allergic protection, covering 10-12 hours—with just one Dimetane Extentab ➤ DIMEETANE**  
Extentabs protect patient for 10-12 hours on one tablet. Periods

of stress can be easily handled with supplementary **DIMETANE** Tablets or Elixir to obtain maximum coverage.



**A. H. ROBINS CO., INC.**

Richmond, Virginia | Ethical Pharmaceuticals of Merit Since 1870



**Dosage:**  
**Adults**—One or two 4-mg. tabs, or two to four teaspoonfuls Elixir, three or four times daily. One Extentab q.s.-t.i.d. or twice daily. Children over 6—one tab, or two teaspoonfuls Elixir t.i.d. or q.i.d., or one Extentab 1/2 tab. Children 3-4— $\frac{1}{2}$  tab, or one teaspoonful Elixir t.i.d.

## NEWS AND NOTES

—Continued from page 164a

Dr. Walske will also be Acting Director of the Department of Surgery at Creighton Memorial-St. Joseph's Hospital. He will replace Dr. Harry H. McCarthy who will devote more time to private practice and research.

### Medical Research Foundation Established for Tay-Sachs' Disease and Allied Disorders

A new non-profit foundation has been established to support and stimulate research, clinical, and educational programs in Tay-Sachs' disease and allied heredo-familial, neuro-degenerative diseases of infancy and childhood. The scope of the program will include, in addition to Tay-Sachs' disease, Niemann-Pick's disease, Infantile Gaucher's disease, Schilder's disease, Diffuse Scler-

osis, Amyotonia Congenita, Friedreich's ataxia, and others. The foundation is known as National Tay-Sachs' Association, Inc., New York Chapter, and is composed of parents who have had afflicted children, interested laymen, and medical personnel in the field.

The foundation is cooperating with the existing clinical and research program of Tay-Sachs' disease and certain of these allied diseases at Jewish Chronic Disease Hospital in Brooklyn, New York. The hospital is presently conducting a special clinic for outpatient care of afflicted children, and is constructing a special ward for the care and observation of inpatient cases. Both of these programs are being conducted in conjunction with the laboratory research program of the Isaac Albert Research Institute of the hospital. A comprehensive genetic study is also being made of the pertinent hereditary pat-

—Continued on page 170a

when anxiety and tension "erupts" in the G. I. tract...

## IN DUODENAL ULCER



# PATHIBAMATE\*

Meprobamate with PATHILON® Loderol®

Combines Meprobamate (400 mg.) the most widely prescribed tranquilizer . . . helps control the "emotional overlay" of duodenal ulcer — without fear of barbiturate loginess, hangover or habituation . . . with PATHILON (25 mg.) the anticholinergic noted for its extremely low toxicity and high effectiveness in the treatment of many G.I. disorders.

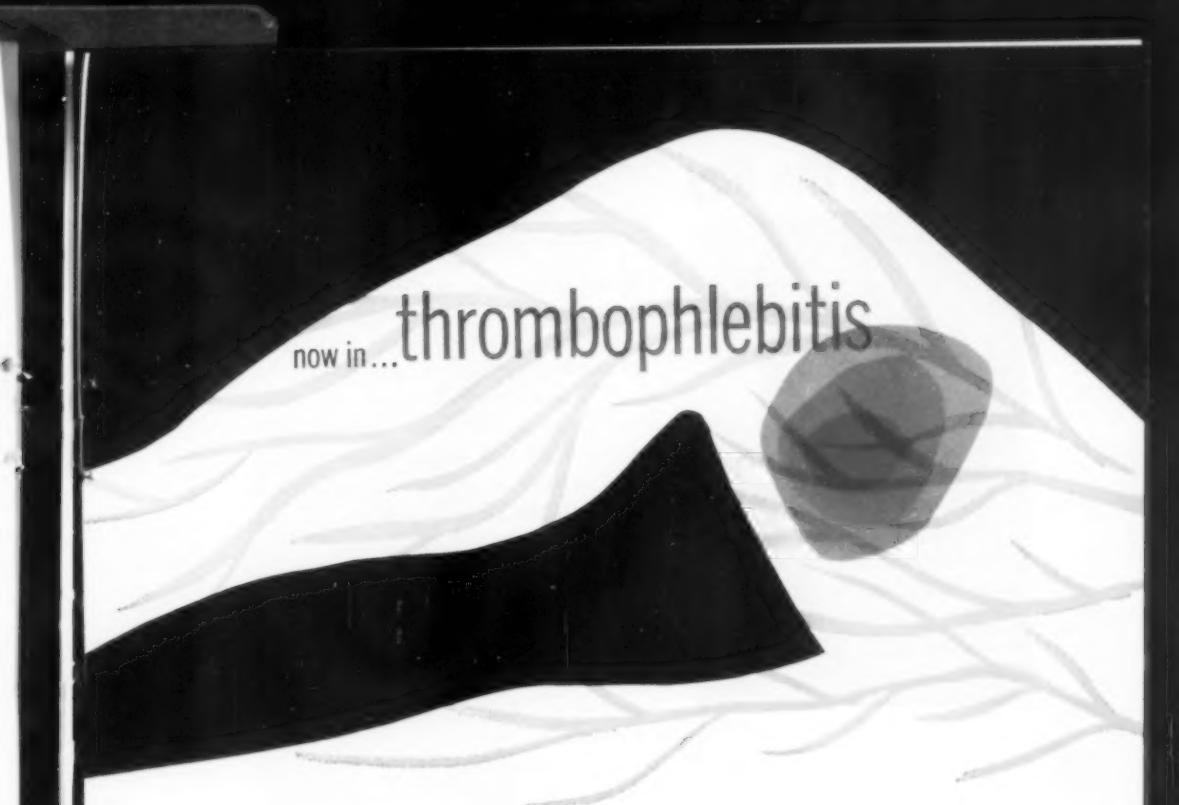
*Dosage:* 1 tablet t.i.d. at mealtime. 2 tablets at bedtime. *Supplied:* Bottles of 100, 1,000.



\*Trademark

® Registered Trademark for Tridihexethyl Iodide Loderol

LEDERLE LABORATORIES DIVISION, AMERICAN CYANAMID COMPANY, PEARL RIVER, NEW YORK



now in...thrombophlebitis

"early and marked regression"<sup>1</sup>

in acute superficial thrombophlebitis

## BUTAZOLIDIN®

(phenylbutazone GEIGY)

nonhormonal anti-inflammatory agent

Relieves Pain Rapidly — BUTAZOLIDIN usually produces complete relief of pain within 24 hours or less.<sup>1,2</sup>

Resolves Inflammation — Fever subsides and local heat, tenderness and swelling regress quickly.<sup>1,3,4</sup> "In the majority of cases there was complete resolution by the fourth day."<sup>5</sup>

Permits Early Ambulation — "As a rule within 24 hours, most patients were able to get up and walk about...."<sup>1</sup> This rapid response to BUTAZOLIDIN greatly reduces disability and economic loss for patients.

Short Course of Treatment — Most patients require only from 2 to 7 days' therapy.<sup>1,5</sup>

BUTAZOLIDIN® (phenylbutazone GEIGY). Red coated tablets of 100 mg. BUTAZOLIDIN Alka Capsules, each containing BUTAZOLIDIN 100 mg.; aluminum hydroxide 100 mg.; magnesium trisilicate 150 mg.; homatropine methylbromide 1.25 mg.

BUTAZOLIDIN being a potent therapeutic agent, physicians unfamiliar with it are urged to send for literature before instituting therapy.

References: (1) Stein, I. D.: Circulation 12:833, 1955. (2) Polvin, L.: Bull. Assoc. méd. lang. franc. Canada 85:941, 1956. (3) Sigg, K.: Angiology 8:44, 1957. (4) Elder, H. H. A., and Armstrong, J. B.: Practitioner 178:479, 1957. (5) Broden, F. R.; Collins, C. G., and Sewell, J. W.: J. Louisiana M. Soc. 109:372, 1957.

**GEIGY**

Ardaley, New York

67150

## brighten the day



for the moody patient...

**Ritalin**<sup>®</sup> hydrochloride  
(methyl-phenylacetate hydrochloride CIBA)

...mild antidepressant, unrelated to amphetamine, brightens outlook and renews vigor — with little or no effect on appetite or blood pressure.

C I B A SUMMIT, N. J.

## brighten the day



for the chronically fatigued...

**Ritalin**<sup>®</sup> hydrochloride  
(methyl-phenylacetate hydrochloride CIBA)

...mild antidepressant, unrelated to amphetamine, brightens outlook and renews vigor — with little or no effect on appetite or blood pressure.

C I B A SUMMIT, N. J.

## NEWS AND NOTES

—Continued from page 168a

terns from histories supplied by the foundation and parents who have children under the care of the hospital. A counseling program is also offered.

The operation of the foundation is on a nationwide basis, and contact is being made for establishment of chapters in other metropolitan areas, in addition to the allied Tay-Sachs' Association in Philadelphia. In order to further its work and, in particular, to prepare a substantial genetic study covering the entire country, physicians and hospitals are respectfully requested to make the existence of the foundation known to parents of children afflicted with these diseases.

For further information on the foundation and its work, write to Medical Committee, National Tay-Sachs' Association, Inc., New York Chapter, P. O. Box 1250, G.P.O., New York 1, N. Y.

### Mecamylamine Called Best Hypertension Treatment

- A tranquilizer in combination with a nerve blocking drug is the most effective available treatment for high blood pressure, three Texas physicians said recently.

Mecamylamine (Inversine) hydrochloride, a ganglionic blocking agent, and reserpine, a derivative of rauwolfia serpentina, were used to treat 75 patients with moderate and severe hypertension at Jefferson Davis and Hermann Hospitals in Houston.

A one-year follow-up study showed that the combination produced as good a result after one year as it had in the

—Continued on page 174a

MEDICAL TIMES



who coughed?

*whenever  
cough therapy  
is indicated*

# Hycodan®

(Dihydrocodeinone with Homatropine Methylbromide)

Relieves cough quickly  
and thoroughly

Effect lasts up to six hours  
permitting a comfortable  
night's sleep

Controls useless cough without  
impairing expectoration

Rarely causes constipation

*Syrup and oral tablets*

Each teaspoonful or tablet of  
HYCODAN® contains 5 mg.  
dihydrocodeinone bitartrate and  
1.5 mg. Mesopin (homatropine  
methylbromide).

Average adult dose:  
One teaspoonful or tablet after  
meals and at bedtime. May  
be habit-forming. Available  
on your prescription.



*Literature? Write*

ENDO LABORATORIES Richmond Hill 18, New York

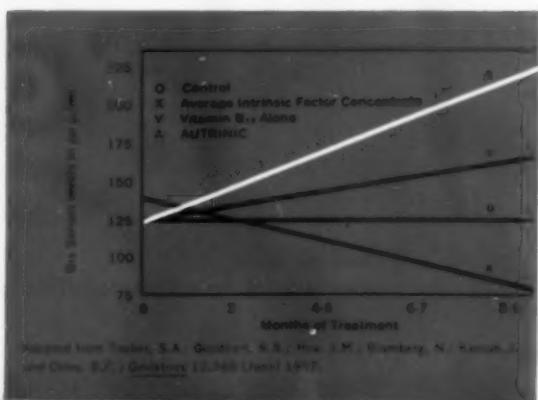
U.S. Pat. 2,630,400

# INTRINSICALLY BETTER IN ANEMIA

## FALVIN FEATURES A NEW KEY COMPONENT...AUTRINIC

Studies with orally administered Cobalt<sup>60</sup>-labeled Vitamin B<sub>12</sub> show that Intrinsic Factor Concentrates now in common use actually decrease B<sub>12</sub> absorption.

NEW AUTRINIC augments intestinal absorption of Vitamin B<sub>12</sub> in all patients, resulting in serum B<sub>12</sub> levels higher than those obtained with conventional Intrinsic Factor Concentrates.



per chronic Anemias due to nutritional  
megaloblastic Anemia of pregnancy or  
the hypochromic Anemias o achlorhydric  
puig" syndrome o megaloblastic Anemia  
efic  
some  
iron  
alo  
microcytic hypochromic anemias  
on Deficiency anemia o following infec  
lesonian pernicious Anemia o macrocytic

# FALVIN\*

HEMATINIC LEDERLE

## with AUTRINIC\*

INTRINSIC FACTOR CONCENTRATE

NOW IN ANTI-ANEMIA THERAPY... HIGHER SERUM  
 $B_{12}$  LEVELS FOR A BETTER PATTERN OF RESPONSE

- BETTER GASTROINTESTINAL RESPONSE
- BETTER NEUROLOGIC RESPONSE
- BETTER HEMATOLOGIC RESPONSE

Each Capsule of FALVIN contains: AUTRINIC Intrinsic Factor Concentrate with  $B_{12}$ ..... 1 U.S.P. Oral Unit  
Folic Acid ..... 1 mg.  
Ferrous Sulfate Exsiccated ..... 300 mg.  
Ascorbic Acid (C) ..... 75 mg.

LEDERLE LABORATORIES DIVISION, AMERICAN CYANAMID COMPANY, PEARL RIVER, NEW YORK  
\*Reg. U.S. Pat. Off.



## brighten the day



for the postoperative patient...

**Ritalin**<sup>®</sup> hydrochloride  
(methyl-phenylacetate hydrochloride CIBA)

...mild antidepressant, unrelated to amphetamine, brightens outlook and renews vigor — with little or no effect on appetite or blood pressure.

C I B A SUMMIT, N. J.

## brighten the day



for the menopausal patient...

**Ritalin**<sup>®</sup> hydrochloride  
(methyl-phenylacetate hydrochloride CIBA)

...mild antidepressant, unrelated to amphetamine, brightens outlook and renews vigor — with little or no effect on appetite or blood pressure.

C I B A SUMMIT, N. J.

## NEWS AND NOTES

—Continued from page 170a

first three to four months, the doctors said in a recent issue of the *Journal of the American Medical Association*. Although somewhat larger doses were needed to maintain the reduced blood pressure after one year, the number and severity of adverse side effects were much reduced. Checks after 18 and 24 months showed no increase in dosage and continued reduction in side-effects.

The doctors compared the effect of mecamylamine, when used alone, with that of three other blood pressure-reducing drugs-hexamethonium, chlorisondamine (Ecolid) chloride, and pentolinium (Ansolsyen) tartrate and found mecamylamine to be "much more potent" than the other drugs.

In addition, mecamylamine had the added advantages of being effective when taken by mouth and producing fewer side effects than the other drugs.

While mecamylamine was effective when used alone, it was much more so when reserpine was also given, the authors said. Reserpine also helped reduce the severity and frequency of such side effects as constipation, weakness, and dizziness.

The authors are Drs. John Moyer, Charles Heider, and Edward Dennis of Baylor University College of Medicine.

### New Blood Test Detects Myocardial Infarction

• A laboratory blood test which aids in the diagnosis of a type of heart attack has been announced by a group of Detroit researchers.

Writing in a recent issue of the *Journal*

—Continued on page 176a

MEDICAL TIMES

New  
liquid pediatric analgesic-antipyretic

# Liquiprin\*

for children

## safer than aspirin, easier to use

for infants' and children's fever, discomfort of colds, minor aches and pains and following immunizations.

LIQUIPRIN is a suspension of salicylamide—chemically and pharmacologically distinctive from aspirin and other salicylates. Clinically, its analgesic-antipyretic action is approximately the same as that of aspirin, but its therapeutic action does not depend on conversion to salicylate, salicylic acid or their metabolites.

LIQUIPRIN offers these major advantages:

- 1 safer than aspirin
- 2 less gastric irritation
- 3 helps calm the feverish, fretful child
- 4 easier on the child with gastrointestinal upset
- 5 more rapidly absorbed
- 6 relieves minor aches and pains—reduces fever

**administration:** Convenient liquid form, pleasant taste and calibrated dropper make for easy accurate administration...directly from dropper or mixed with fruit juice, formula or milk. Each  $\frac{1}{2}$  dropper contains  $1\frac{1}{4}$  gr. of salicylamide.

**dosage:**  $\frac{1}{2}$  dropper for each year of age, not to exceed 2 droppers (5 gr.).



◀ **added safety:** LIQUIPRIN is supplied in non-spill safety bottles. LIQUIPRIN is safer than aspirin—and made safer still because children cannot pour or drink the medication from this new, exclusive safety container.

**available:** bottles of 50 cc., 1 gr. salicylamide per cc.

bettering baby care through specialized research

\*TRADEMARK FOR SALICYLAMIDE SUSPENSION, JOHNSON & JOHNSON.

Johnson & Johnson

## NEWS AND NOTES

—Continued from page 174a

*nal of the American Medical Association*, Roderick P. MacDonald, Ph.D., Dr. John R. Simpson, and Egon Nossal, B.S., of Harper Hospital, said determination of lactic dehydrogenase (LDH) levels in the blood stream can be used to aid the diagnosis of myocardial infarction.

In myocardial infarction the heart muscle cells are destroyed when a blood clot shuts off their blood supply.

Lactic dehydrogenase is a body enzyme which is increased in the blood stream following muscle cell destruction. A marked increase in the blood LDH level, along with other common diagnostic signs, makes diagnosis of such heart failures much easier, the researchers said. In fact, the serum LDH levels

make myocardial infarction diagnosis possible "when all other methods have failed."

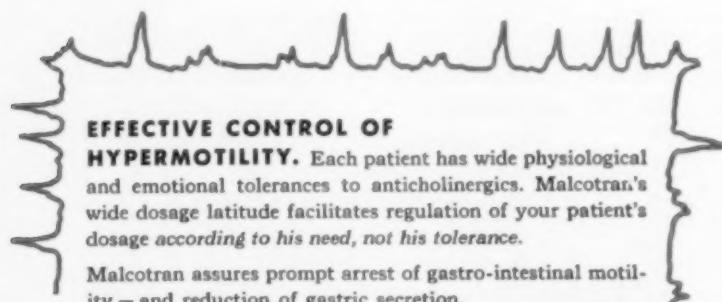
The use of blood tests in analyzing tissue destruction in the body has been assuming increasing importance, the authors said. In 1955, a similar test using another enzyme, transaminase, was described by a group of West Coast researchers.

The LDH level test has two advantages over the transaminase test: in myocardial infarction the LDH levels remain higher for a longer period of time, and the testing procedure is less complicated.

The new test is especially useful, they said, when an electrocardiograph fails to give a clear picture of heart damage or when complications occur after myocardial infarction.

The researchers studied 174 patients, of whom 94 had heart disease. The

—Continued on page 178a



### EFFECTIVE CONTROL OF

**HYPERMOTILITY.** Each patient has wide physiological and emotional tolerances to anticholinergics. Malcotran's wide dosage latitude facilitates regulation of your patient's dosage *according to his need, not his tolerance.*

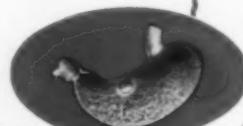
Malcotran assures prompt arrest of gastro-intestinal motility — and reduction of gastric secretion.

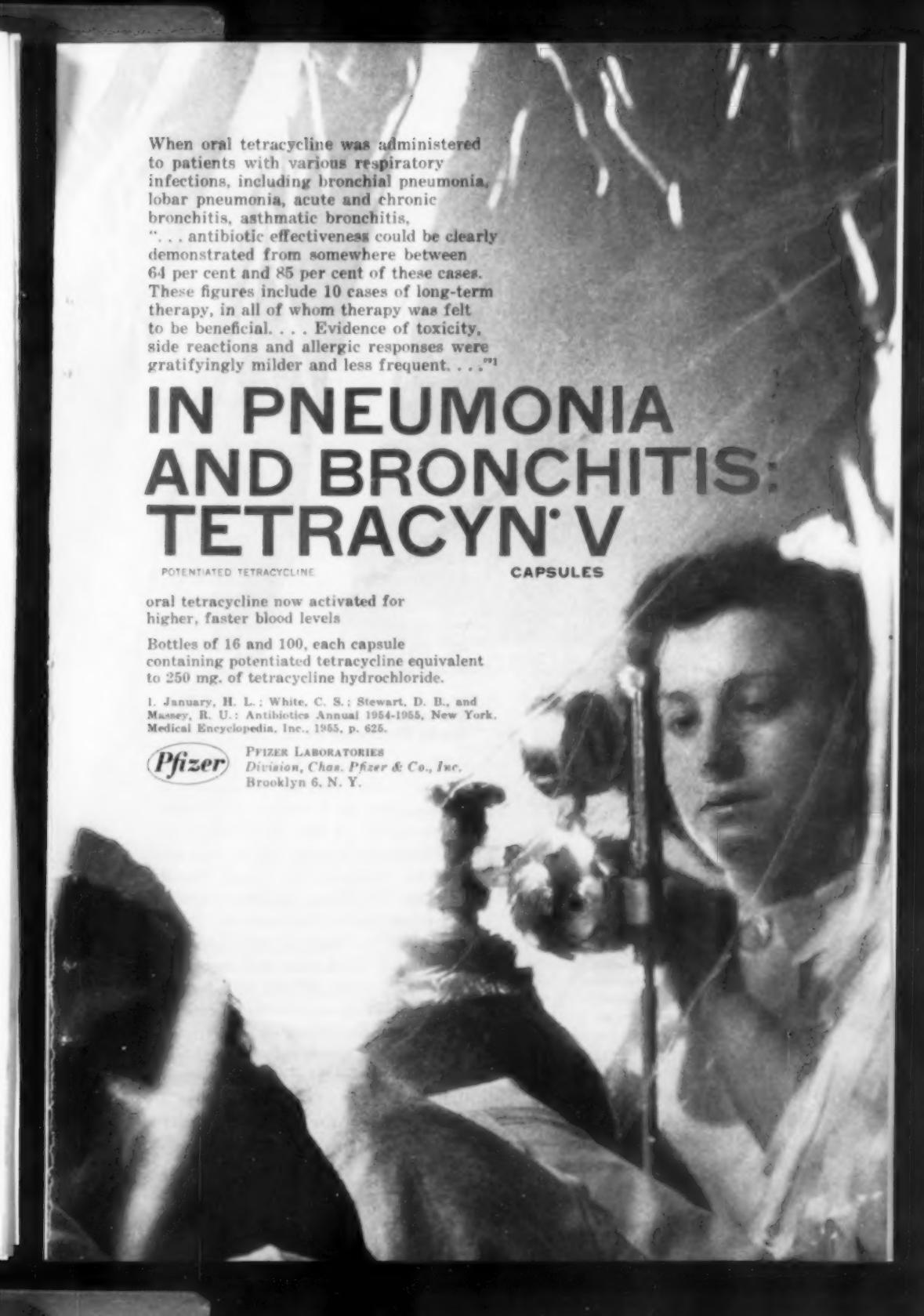
## MALCOTRAN® for peptic ulcer



PM-72

MALTBIE LABORATORIES DIVISION • WALLACE & TIERNAN INC.





When oral tetracycline was administered to patients with various respiratory infections, including bronchial pneumonia, lobar pneumonia, acute and chronic bronchitis, asthmatic bronchitis, ". . . antibiotic effectiveness could be clearly demonstrated from somewhere between 64 per cent and 85 per cent of these cases. These figures include 10 cases of long-term therapy, in all of whom therapy was felt to be beneficial. . . . Evidence of toxicity, side reactions and allergic responses were gratifyingly milder and less frequent. . . ."<sup>1</sup>

# IN PNEUMONIA AND BRONCHITIS: TETRACYN® V

POTENTIATED TETRACYCLINE

CAPSULES

oral tetracycline now activated for higher, faster blood levels

Bottles of 16 and 100, each capsule containing potentiated tetracycline equivalent to 250 mg. of tetracycline hydrochloride.

<sup>1</sup> January, H. L.; White, C. S.; Stewart, D. B., and Massey, R. U.: *Antibiotics Annual 1954-1955*, New York: Medical Encyclopedia, Inc., 1955, p. 625.



PFIZER LABORATORIES  
Division, Chas. Pfizer & Co., Inc.  
Brooklyn 6, N. Y.

the  
difference  
between  
**STOP and GO**

in cases of

- **INTESTINAL CRAMPS**
- **DYSMENORRHEA**
- **SMOOTH MUSCLE SPASM**
- **HEAT CRAMPS**

## **HVC** HAYDEN'S VIBURNUM COMPOUND

Contains *viburnum opulus*, *dioscorea*,  
pricky ash berries, aromatics and suffi-  
cient alcohol to release the resins in the  
crude drugs.

Patients who have been stopped by  
smooth muscle spasm are soon on the  
go again with HVC, prescribed by  
physicians for over ninety years as a  
consistently reliable sedative and  
smooth muscle relaxant. Symptomatic  
relief is both prompt and prolonged,  
and HVC is free from narcotics or  
hypnotics.

antispasmodic and sedative

Write for literature and professional sample.

**NEW YORK PHARMACEUTICAL CO.**  
Bedford, Mass. U. S. A.

## NEWS AND NOTES

—Continued from page 178a

LDH level was higher in all 44 patients with myocardial infarction and substantially higher in 39. The rise in LDH level in these patients began on the first day of the patients' attacks. Maximum levels were reached on the second and third days and slowly declined to normal by the sixth to eleventh days.

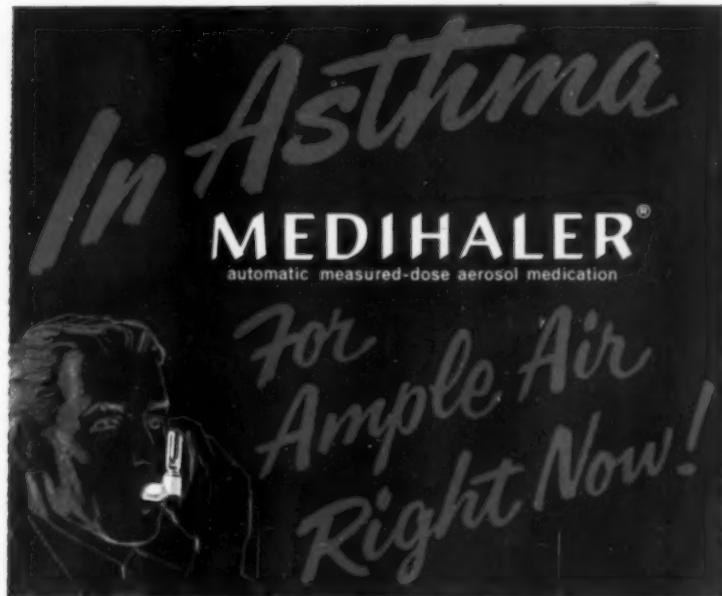
While several other diseases cause increased LDH levels, they generally are not confused with acute myocardial infarction because of other diagnostic signs which distinguish between them. There are also some diseases which show the same symptoms as myocardial infarction; however, these do not cause rises in the LDH levels. Thus the LDH test can be used in the differentiation of such illnesses.

### **Dr. Irving S. Cooper Made Professor at N.Y.U.**

The promotion of Dr. Irving S. Cooper from Assistant Professor of Neurosurgery to Professor of Clinical Neurosurgery, of New York University Post-Graduate Medical School, was announced recently by Dean Donal Sheehan. Dr. Cooper is internationally recognized for his discovery and development of two surgical procedures for the relief of involuntary movement disorders in persons afflicted with certain types of Parkinsonism and cerebral palsy. The procedures are known as the "Anterior Choroidal Artery Ligation for Involuntary Movements and Rigidity" and "Chemopallidectomy." The Doctor is on the staffs of University

—Continued on page 180a

**MEDICAL TIMES**



NOTHING IS QUICKER • NOTHING IS MORE EFFECTIVE

### Medihaler-EPI®

For quick relief of bronchospasm of any origin. More rapid than injected epinephrine in acute allergic attacks.

Epinephrine bitartrate, 7.0 mg. per cc., suspended in inert, nontoxic aerosol vehicle. Contains no alcohol. Each measured dose 0.15 mg. actual epinephrine.

### Medihaler-ISO®

Unsurpassed for rapid relief of symptoms of asthma and emphysema.

Isoproterenol sulfate, 2.0 mg. per cc., suspended in inert, nontoxic aerosol vehicle. Contains no alcohol. Each measured dose 0.06 mg. actual isoproterenol.

Prescribe Medihaler medication with Oral Adapter on first prescription. Refills available without Oral Adapter.

#### FOR KIDDIES TOO

Notably safe and effective for children.  
Nonbreakable, spillproof.



## NEWS AND NOTES

—Continued from page 178a

Hospital of New York University-Bellevue Medical Center; New York City's Bellevue Hospital Center; Central Islip (Long Island) State Hospital, and St. Barnabas Hospital.

### A.M.A. Council Recommends Influenza Treatment

• Antibiotics and sulfa drugs should not be used to treat Asian influenza but should be saved for patients with complications, according to an American Medical Association council report.

The report, prepared by the Council on Drugs at the request of the A.M.A.'s special committee on influenza, appeared in a recent issue of the *A.M.A. Journal*.

The report pointed out that pneumonia and its complications frequently

followed the influenza of 1918-19. Since there is a similarity between this year's movement of Asian influenza and that of 1918, the council report was made to inform physicians as to the exact role antibiotics and sulfa drugs should play in the treatment of influenza and its secondary infections.

An accompanying editorial pointed out that most viruses, including those causing Asian influenza, are not affected by antibiotics and sulfa drugs. Therefore, using them to treat influenza serves no purpose. However, they do affect bacterial infections, such as pneumonia, which may follow flu.

Actually very little can be done to treat influenza itself. The best treatment, which may help prevent complications, is bedrest, sufficient fluids, and agents to reduce fever.

Antibiotics should not be given to

—Continued on page 183a

when anxiety and tension "erupts" in the G. I. tract...

## IN ILEITIS



## PATHIBAMATE<sup>®</sup>

Meprobamate with PATHILON<sup>®</sup> Lederle

Combines Meprobamate (400 mg.) the most widely prescribed tranquilizer . . . helps control the "emotional overlay" of ileitis — without fear of barbiturate loginess, hangover or habituation . . . with PATHILON (25 mg.) the anticholinergic noted for its extremely low toxicity and high effectiveness in the treatment of many G.I. disorders.

*Dosage:* 1 tablet t.i.d. at mealtime, 2 tablets at bedtime. *Supplied:* Bottles of 100, 1,000.



® Trademark      ® Registered Trademark for Tridihethyl Iodide Lederle

LEDERLE LABORATORIES DIVISION, AMERICAN CYANAMID COMPANY, PEARL RIVER, NEW YORK

*the path to*

*effective ulcer therapy*

*with few side effects*

Effects of anticholinergic drugs on peptic ulcer<sup>1</sup>

	Atropine	Anticholinergic A	Anticholinergic B	PATHILON
<i>Daily Dose</i>	1.6 mg.	400 mg.	120 mg.	200 mg.
<i>No. patients and length of follow-up</i>	37 11 mo.	27 13 mo.	16 9 mo.	21 11 mo.
<i>Results:</i>				
Good to excellent	51%	74%	56%	76%
Fair to poor	49%	26%	44%	24%
<i>Recurrences:</i>				
None	16%	22%	13%	19%
Few	46%	48%	50%	57%
Same	38%	38%	38%	24%
<i>Complications:</i>				
Hemorrhage	5%	7%	19%	9.5%
Perforation	0%	4%	0%	0%
Obstruction	0%	4%	0%	0%
Surgery needed	3%	4%	6%	0%
<i>Side effects:</i>				
Oral	38%	78%	25%	14%
Visual	11%	48%	6%	0%
Sphincter	11%	15%	0%	0%

*Available in three forms:* tablets of 25 mg., plain (Pink) or with phenobarbital, 25 mg. (Blue), and parenteral, 10 mg./cc.—1 cc. ampuls.

*Dosage:* 1 or 2 tablets before each meal and at bedtime. Parenterally, 10 to 20 mg. every 6 hours.

*Also available:* PATHRAMATE<sup>\*\*</sup> Meprobamate with PATHILON LEDERLE, for gastrointestinal disorders and their "emotional overlay."

<sup>1</sup> After Cayer, D.: Prolonged anticholinergic therapy of duodenal ulcer, *Am. J. Digest. Dis. & Diet.* 1:301 (July) 1956.

<sup>\*\*</sup>Reg. U.S. Pat. Off.    <sup>\*\*</sup>Trademark

*in anticholinergic therapy...  
weigh the benefits  
against the side effects*

**PATHILON\***

Tridihexethyl Iodide LEDERLE



LEDERLE LABORATORIES DIVISION, AMERICAN CYANAMID COMPANY, PEARL RIVER, NEW YORK

AZOTREX is the only urinary anti-infective agent combining:

(1) the broad-spectrum antibiotic efficiency of TETREX—the original tetracycline phosphate complex which provides faster and higher blood levels;

(2) the chemotherapeutic effectiveness of sulfamethizole—outstanding for solubility, absorption and safety;

(3) the pain-relieving action of phenylazodiamino-pyridine HCl —long recognized as a urinary analgesic.

# control of urinary

*through comprehensive*

*Literature and clinical supply  
on request*

**Bristol**



LABORATORIES INC., SYRACUSE, NEW YORK



*Free copy  
on request*

## another useful publication from CIBA *to aid you in your practice...*

### **Contents include:**

- significance of pheochromocytoma
- the test with Regitine
- clinical experience

- published comment
- treatment of pheochromocytoma and additional information of particular interest

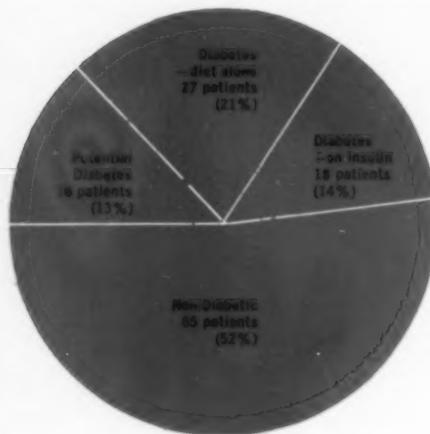
As a further effort to be of service to the medical profession, we now offer this brief treatise on a tumor that is of great significance pathologically. Complete with illustrations and graphic data, *The Test with Regitine® for Pheochromocytoma* can prove most valuable in your everyday practice. For your free copy, write Medical Service Division, CIBA, Summit, New Jersey.

REGITINE® (phentolamine CIBA)

# AN AMES CLINIQUICK

CLINICAL BRIEFS FOR MODERN PRACTICE

## DIABETES FOLLOWING TRANSIENT GLYCOSURIA\*



*should a non-diabetic,  
transient glycosuria ever be  
considered unimportant?*

Never. A patient showing even a mild transient glycosuria should be observed for years as a diabetic suspect.\*

Ultimate diagnosis on 126 patients with a previous transient mild glycosuria. Twenty diabetics were discovered 5-10 years after a recorded glycosuria—10 diabetics after more than 10 years.\*

\*Murphy, R.: Connecticut M. J. 21:306, 1957.

## COLOR CALIBRATED CLINITEST® Reagent Tablets

the STANDARDIZED urine-sugar test  
for reliable quantitative estimations

- full color calibration, clear-cut color changes
- established "plus" system covers entire critical range
- standard blue-to-orange spectrum long familiar to diabetics
- unvarying, laboratory-controlled color scale



AMES COMPANY, INC. • ELKHART, INDIANA  
Ames Company of Canada, Ltd., Toronto

48487

## NEWS AND NOTES

—Continued from page 180a

persons already suffering from influenza with the hope of preventing bacterial infections, the report said. The drugs should not be given for two reasons: to prevent the development of bacteria that would be resistant to the drugs, and to prevent the patient from becoming sensitive to the drugs.

In addition, the editorial pointed out that antibiotics and sulfa drugs sometimes cause adverse side effects which may be "merely annoying in healthy persons," but "disastrous for the critically ill."

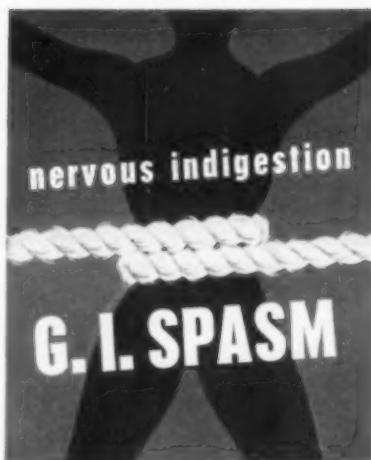
The only exception to this rule would be patients who develop influenza while receiving the drugs for other bacterial infections, very ill or rundown infants and older persons, and patients suffering from chronic, non-allergic respiratory tract disease.

All influenza patients who develop secondary bacterial infections should be treated with a sulfonamide or antibiotic, depending on the causative organism, the report said. However, it warned that careful checks for sensitivity to these drugs should be made.

The council report concluded with the advice that patients with uncomplicated influenza should be treated at home and not taken to a hospital, thus avoiding possible exposure to bacterial complications.

### Medicine to Support Youth Fitness Projects

- The American medical profession will support any worthwhile project in President Eisenhower's broad program for the fitness of American youth, ac-



# Convertin-H

*Fortified Digestive Enzymes  
WITH ANTISPASMODIC*

Convertin-H fortifies gastric and pancreatic enzymes to aid digestion, and supplies an effective antispasmodic to combat the spasm.

**Composition:**

Each Convertin-H tablet contains:

**In sugar-coated outer layer**

Homatropine Methylbromide	2.5 mg.
Betaine Hydrochloride	130.0 mg.
(providing 5 minimis diluted Hydrochloric Acid U.S.P.)	

Oleoresin Ginger 1/600 gr.

**In enteric-coated inner core**

Pancreatin (4 x U.S.P.)	62.5 mg.
(equiv. to Pancreatin U.S.P. 250 mg.)	
Desoxycholic Acid	50.0 mg.

**Dose:** 1 or 2 tablets with or just after meals.

**Supplied:** In bottles of 84 and 500 tablets.

*send for samples*



**B. F. Ascher & Co., Inc.**

*Ethical Medicinals*

KANSAS CITY, MO.

cording to the American Medical Association's director of health education.

However, Dr. W. W. Bauer added, the profession will oppose any unsound proposals or movements which are wasteful, duplicating, or which compete with existing programs.

Dr. Bauer, who is one of five physicians on the President's Citizens Advisory Committee on Fitness of American Youth, made his comments just before attending the group's meeting in West Point, N. Y.

He said that while the American medical profession recognizes that there can be considerable improvement in physical fitness, it does not believe that American youth has become "soft" or "flabby."

"I don't think American youth is go-

ing to pot," Dr. Bauer declared.

American youngsters may be out of training, but they have the basic health essentials needed in time of emergency, he added.

The medical profession has always shown an interest in the fitness of American youth, Dr. Bauer said. The early proceedings of the House of Delegates of the American Medical Association have shown such an interest since the A.M.A.'s organization in 1847.

Medicine stands for a broad concept of fitness, Dr. Bauer pointed out. This must be based on essential fundamentals of which the first is good physical and emotional health, he added.

American youth has these basic essentials, according to Dr. Bauer.

"Height and weight figures show that

## To help patients say "No thanks"...

Rx

# BIPHETAMINE®

A 'STRASENBERGH' RELEASE PRODUCT

RESIN

**APPETITE CONTROL** for 10-14 hours,  
due to 'Strasenbergh'—sustained ionic—release.

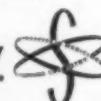
**PATIENT  
APPRECIATION**  
one capsule once-a-day.



**PREDICTABLE  
WEIGHT LOSS** Rx Biphetamine capsules  
containing a mixture of equal parts of  
amphetamine and dextro amphetamine in the  
form of a resin complex. Three strengths—  
Biphetamine 20 mg., 12½ mg., 7½ mg.

For Literature  
and Samples, Write

**STRASENBERGH**  
Originators of "Strasenbergh" (sustained ionic) Release



B. J. STRASENBERGH CO., ROCHESTER, N. Y., U.S.A.

MEDICAL TIMES

out young people are stronger and heavier than any previous generation," Dr. Bauer said. Average length of life and life expectancy at birth are both at a high level, he added.

On the point of how to maintain physical fitness, Dr. Bauer had several suggestions.

We believe in competitive sports, he said, provided adequate safeguards are observed and the competition is not started too early.

"Extending competition to too tender an age has potentialities of danger," he observed.

Dr. Bauer believes that physical education, properly taught, supervised, and equipped, should be conducted in the schools. He also recommends team sports, but strongly urges everyone,

whether a member of such a team or not, to become interested in some personal sport that can be followed through life.

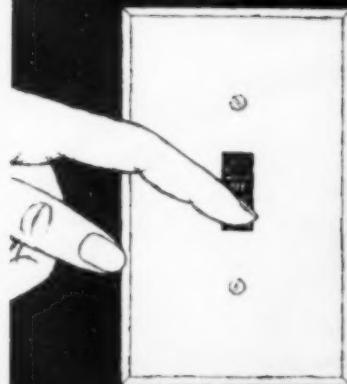
"Swimming, hiking, golf, and tennis are a few such sports," he said.

### 7 Per Cent of All Hospital Cases Are Accidents

Accidents account for about 7 per cent of all cases treated in American hospitals, according to a new survey by the American Medical Association.

Accidents combined with pregnancy, the "other great nondisease category," account for about one-fourth of the total hospital load, according to an editorial in a recent issue of the A.M.A. Journal. Many people believe that all patients are hospitalized for disease, the editorial noted.

*at last...* **YOU CAN TURN OFF THE COUGH UNTIL MORNING...**



## TUSSIONEX™

A Strasonic® Resin Product • Dihydrocodeine Resin • Phenyltoloxamine Resin

### 8-12 HOUR CONTROL WITH A SINGLE DOSE

through sustained 'Strasonic' release.

Suppresses nighttime sleep-robbing, daytime distracting, useless coughs without interfering with the protective cough mechanism.

Over 12,000 clinical observations<sup>1, 2, 3, 4</sup> demonstrate its wide field of usefulness in ages ranging from 3 months to more than 70 years.

REFERENCES: (1) Chan, Y. T. and Hays, E. E., The American Journal of the Medical Sciences, August 1957. (2) Townsend, E. H., Jr., In Press. (3) Weismiller, F., In Press. (4) Cass, Leo I. and Frederick, W. S., In Press.

Now Available on Your Prescription

#### EACH TUSSIONEX TABLET CONTAINS

5 mg. Dihydrocodeine as a resin complex  
10 mg. Phenyltoloxamine as a resin complex

Stock bottle of 100

#### SUGGESTED DOSE

One tablet or teaspoon (5cc) q12h.  
Rx only. Class B taxable narcotic.

#### EACH TEASPOON (5cc) TUSSIONEX LIQUID CONTAINS

5 mg. Dihydrocodeine as a resin complex  
10 mg. Phenyltoloxamine as a resin complex

Stock bottle of 16 oz.

**STRASENBURGH**

Originators of Strasonic® -sustained ionized Release

© 1958 STRASENBURGH CO., KENNETT SQUARE, PA. 19348



The study on accidents, prepared by the A.M.A. Bureau of Medical Economic Research, is part of a comprehensive survey of medical services given to the American people. The accident study was based on information about patients discharged from 6,000 general and special hospitals during November, 1955. Tuberculosis and mental hospitals were excluded from the study.

The 128,000 patients hospitalized because of accidents comprised 6.9 per cent of all patients discharged during the month. The average hospital stay for accident patients was 10.7 days as compared with 9.1 days for non-accident patients. The accident cases required the use of 50,500 beds, or 6.7 per cent of total beds available.

The personnel devoted to the care of accident cases totaled 68,200 or 6.7 per cent of total personnel, and the annual hospital payroll expense was 198

million dollars, or 7.3 per cent of the total payroll.

Depending on the criteria used for the measurements, the bureau concluded that the treatment of accident cases accounts for 7 to 8 per cent (6.7 to 8.1 per cent) of the burden of American hospitals.

The study also showed the following:

The 128,000 accident patients spent a total of 1,370,000 days in the hospital, or 8.1 per cent of the total days spent by all patients discharged during the month.

Of the accident patients, 65.2 per cent were males and 34.8 per cent females. Of the males, 11.3 per cent were under 15 years of age; 35.6 per cent in the 15-44 age group; 13.1 per cent in the 45-64 age group, and 5.2 per cent 65 years and over. Of the females, 5.8 per cent were under 15 years of age; 12.4 per

—Continued on page 188a

*in obesity*

one of many indications for

**MYADEC**  
high potency vitamin-mineral formula

**"adequate minerals and vitamins  
must be supplied in any long-continued  
weight reduction program."\***

MYADEC Capsules are supplied in bottles of 30, 100, 250, and 1,000.

\*McBryde, C. M., in Conn, H. E: *Current Therapy 1957*, Philadelphia, W. B. Saunders Company, 1957, p. 292.



PARKE, DAVIS & COMPANY · DETROIT 32, MICHIGAN

SOIES

New!

# Theradan

TRADEMARK

## with Sarthionate

T.M.

*Clears up the severest dandruff with just 3 applications*



### RELIEF LASTS FOR MONTHS

Twenty months of clinical investigation on dandruff demonstrate *complete clearing of scaling in all cases, usually with just three applications* of easy-to-use THERADAN. Dandruff cases resistant to resorcin, sulfur and selenium preparations clear promptly and safely with new THERADAN.

*Relief of scaling is long-lasting—scalp stays clear for 1 to 4 months.*

### HOW THERADAN ACTS

THERADAN is a therapeutic formula not a shampoo or tonic. THERADAN contains Sarthionate, our trademark for a distinctive new combination of a special form of sulfur and a wetting agent.

This unique solution not only clears loose dandruff, but also removes dead tissue by penetrating the outermost layers of the scalp. In mild or moderate cases of seborrhea, THERADAN is left on the scalp for  $\frac{1}{2}$  to 1 hour before shampooing. In severe cases, THERADAN is left on up to eight hours or over night.

## Theradan

### active ingredients

#### Sarthonate

lauryltrimethylammonium-polythionate (by weight)	3.0%
tetracyclonias-a-laureyl sarcosine (by weight)	0.5%
ethyl alcohol (by volume)	58.85%

For more information about the clinical background of THERADAN, write to Medical Director, Dept. M-18



Bristol-Myers Co. • 19 W. 50 St. • New York 20, N. Y.

## NEWS AND NOTES

—Continued from page 186a

cent in the 15-44 age group; 8.6 per cent in the 45-64 age group, and 8 per cent 65 years and over.

During the reporting year (ending Sept. 30, 1955 for most hospitals), the care of accident victims cost 311 million dollars, or 7.4 per cent of the total annual expenses of the hospitals. The report noted that the total for 1957 "presumably" involved many more millions of dollars.

### N. Y. U. Names Thomas Chairman of Department of Medicine

Dr. Lewis Thomas has been nominated by the Board of Trustees of New York University as professor and chairman of the department of medicine in the College of Medicine and director

of the Third Medical Division of New York City's Bellevue Hospital Center.

Dr. Thomas's appointment will become effective with the retirement of Dr. William S. Tillett at the close of the 1957-1958 academic year.

Dr. Thomas is well known in his profession for his early recognition of the danger of the indiscriminate use of cortisone in the treatment of infectious diseases and for his research work in general in infectious diseases. He is also widely recognized for his research work in hypersensitivity and allergic reactions.

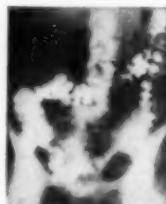
Currently, Dr. Thomas is professor and chairman of the department of pathology, a position he has held since joining the faculty of NYU in 1954.

Dr. Thomas was appointed a member of the Board of Health of New York City in January 1957 by Mayor

—Continued on page 190a

when anxiety and tension "erupts" in the G. I. tract...

## in spastic and irritable colon



# PATHIBAMATE\*

Meprobamate with PATHILON® Lederle

Combines Meprobamate (400 mg.) the most widely prescribed tranquilizer...helps control the "emotional overlay" of spastic and irritable colon—without fear of barbiturate loginess, hangover or habituation...with PATHILON (25 mg.) the anticholinergic noted for its extremely low toxicity and high effectiveness in the treatment of many G.I. disorders.

Dosage: 1 tablet t.i.d. at mealtime. 2 tablets at bedtime. Supplied: Bottles of 100, 1,000.



\*Trademark

® Registered Trademark for Tridihexyl Iodide Lederle

LEDERLE LABORATORIES DIVISION, AMERICAN CYANAMID COMPANY, PEARL RIVER, NEW YORK



# Disipal®

Brand of Orphenadrine HCl

Relieves Spasm, Pain, and Depression too

#### IN PARKINSONISM

Highly selective action...energizing against weakness, fatigue, adynamia and akinesia...potent against sialorrhea, diaphoresis, oculogyria and blepharospasm...lessens rigidity and tremor...alleviates depression...safe...even in glaucoma.

\*Trademark of Brocades-Sheeman & Pharmacia.  
U. S. Patent No. 2,567,351. Other patents pending.

**Riker** DRUGS

Patients with muscle spasm of the usual types demand relief first. Disipal fills this need. In sprains, strains, fibrositis, non-inflammatory arthritic states and other musculoskeletal disorders, Disipal not only relieves the spasm, but alleviates the depression which so often accompanies pain of any type.

Dosage: 1 tablet (50 mg.) t.i.d.

## NEWS AND NOTES

—Continued from page 188a

Robert F. Wagner. He is also a member of the Research Council of the Public Health Research Institute of New York and a consultant to both the Surgeon General, U. S. Army and the Surgeon General of the U. S. Public Health Service.

Dr. William S. Tillett, retiring chairman of the department of medicine, will become full-time project director for research in the field of allergy and infectious diseases. The five-year program, which began September 1, was awarded to Dr. Tillett by the National Institute of Allergy and Infectious Dis-

eases of the U. S. Department of Health, Education and Welfare.

Dr. Tillett and his associates received international fame for their discovery of streptokinase-streptodornase, known as SK-SD. They are enzymes which have been found to be highly effective in dissolving and eliminating products of long-standing chronic infections.

### Activity Recommended as Fatigue Treatment

Rest is not "a universal panacea" for fatigue, even among aging persons, a New York physician said recently.

In many cases, activity is a better remedy, especially when the fatigue results from "atrophy of disuse," Dr.

—Continued on page 192a

## EFFECTIVE TREATMENT AND PREVENTION OF Diaper Rash

Diaparene® Chloride Ointment 93% effective in the treatment of ammonia dermatitis. The case illustrated cleared in 4 days.

T. Niedelman, M. L. and Bleier, A., Jnl. Ped. 37:762, 1950.



PHARMACEUTICAL DIVISION, HOMEMAKERS' PRODUCTS CORPORATION • ENGLEWOOD CLIFFS, N. J.

190a

MEDICAL TIMES

**NEW...**

for advanced management  
of inflammatory  
anorectal disorders

**WYANOID'S HC**

*Rectal Suppositories with Hydrocortisone,  
Wyeth*

**hydrocortisone to reduce  
inflammation and edema...  
plus the WYANOID'S formula  
to relieve itching, burning,  
soreness, pain**

Composition: Each suppository contains hydrocortisone (as acetate), 10 mg.; extract belladonna, 0.5% (equiv. total alkaloids, 0.0063%); ephedrine sulfate, 0.1%; zinc oxide, boric acid, bismuth oxyiodide, bismuth subcarbonate, and balsam peru in an oleaginous base.

Supplied: WYANOID'S with Hydrocortisone, boxes of 12.

Comprehensive literature available on request

• Acute and chronic  
nonspecific  
proctitis

• Radiation  
proctitis

• Proctitis  
accompanying  
ulcerative  
colitis

• Medication  
proctitis

• Acute  
internal  
hemorrhoids

• Cryptitis

• Postoperative  
scar tissue  
with  
inflammatory  
reaction

• Internal  
anal  
pruritus



Philadelphia 1, Pa.

## NEWS AND NOTES

—Continued from page 190a

Theodore G. Klumpp, president of Winthrop Laboratories, Inc., said.

In the absence of specific disease as a cause of fatigue, it arises in older persons from the normal physiological processes of aging which reduce the body's endurance; from loss of incentive, motivation, and interest; from a decline of glandular activity, and from "atrophy of disuse."

Fatigue is "a normal incident of normal living," but when its pattern changes radically or it interferes with ordinary activities, it becomes a serious problem and needs medical attention, Dr. Klumpp said in a recent issue of the *Journal of the A.M.A.* His article is one of a series on aging.

"For a long time, the approach to

the problem of fatigue was thought to be simple. A brief history of the patient's mode of life was obtained with one objective in mind—to cut out something.

"It made little difference how little the individual was doing—if the patient was tired, something had to go . . . if the patient did nothing more than sit in a rocking chair all day long, he was no doubt advised to stop rocking and go lie down," he said.

Now physicians know better. Following the surgeons' practice of getting patients up soon after surgery, they now prescribe physical activity.

The pattern of American life is specifically designed to avoid physical activity and stress—to the point where physical exertion is virtually eliminated, the author said. Young people are able to keep in relatively good physical condition.

—Continued on page 194a

when anxiety and tension "erupts" in the G. I. tract...

## IN GASTRIC ULCER



## PATHIBAMATE\*

Meprobamate with PATHILON® Lederle

Combines Meprobamate (400 mg.) the most widely prescribed tranquilizer . . . helps control the "emotional overlay" of gastric ulcer — without fear of barbiturate loginess, hangover or habituation . . . with PATHILON (25 mg.) the anticholinergic noted for its extremely low toxicity and high effectiveness in the treatment of many G.I. disorders.

Dosage: 1 tablet t.i.d. at mealtime. 2 tablets at bedtime.

Supplied: Bottles of 100, 1,000.



\*Trademark      ® Registered Trademark for Trid Healthy Indole Lederle  
LEDERLE LABORATORIES DIVISION, AMERICAN CYANAMID COMPANY, PEARL RIVER, NEW YORK

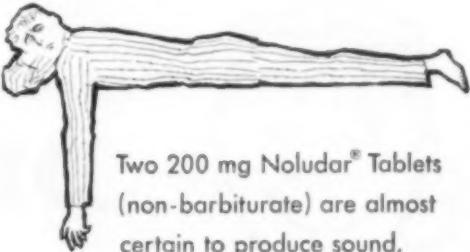
# Noludar

will put your patient

to sleep 

and he will not awaken

with that knocked out

feeling 

Two 200 mg Noludar® Tablets  
(non-barbiturate) are almost  
certain to produce sound,  
restful sleep. One 200 mg  
tablet is frequently adequate.

ROCHE LABORATORIES  
Division of Hoffmann-La Roche Inc  
Nutley 10, New Jersey

Noludar®—brand of methyprylon—non-barbiturate  
sedative-hypnotic

## NEWS AND NOTES

—Continued from page 192a

dition through sports and play, but, as they grow older, they tend to give up these things. With the help of "labor-saving devices, now including electric golfmobiles," they begin to suffer rapidly and too early in life from atrophy of disuse.

This brings with it a loss of muscular tone and functional reserve of all parts of the body, so that the slightest added stress causes undue fatigue. Maintaining an adequate physical reserve against stress is the best preventive for such fatigue.

Fortunately some degree of fitness can be regained through a program of graded exercise at any time, except where its loss is due to advanced organic

disease. The exercise should be fun for the patient and should not be drudgery. Along with the exercise, the aging patient also needs an adequate amount of sleep at night and if necessary a short nap at midday.

Undue fatigue occurs more commonly among overweight persons. In addition to the obvious diet, the doctor should prescribe some type of exercise, despite the traditional "hearsay to the contrary," Dr. Klumpp said. Its greatest value lies in its stimulating effect on endocrine gland activity and in overcoming the tendency "to sleep and snooze too much—a common counterpart of obesity."

Dr. Klumpp also noted that much fatigue in aged persons occurs because they lose their incentive and interest in life. Then the doctor must help the

—Continued on page 196a

choice salt substitute in a pinch...

and in any low-salt diet you prescribe

# DIASAL®

salt without sodium

looks like salt...  
tastes like salt...  
flavors food like salt

DIASAL, containing potassium chloride, glutamic acid and inert ingredients, is supplied in 2-ounce shakers and 8-ounce bottles.

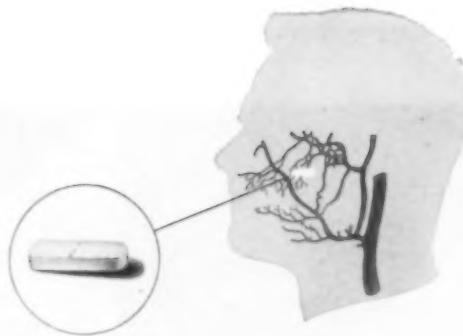


FOUGERA

E. FOUGERA & COMPANY, INC. • NICKSVILLE, LONG ISLAND, NEW YORK

1425

potent oral androgen\*



\* Metandren Lingueuts take advantage of buccal vascularity for efficient absorption into capillaries and lymphatic vessels. No need to inject androgens. You can prescribe METANDREN® (methyltestosterone U.S.P. CIBA) LINGUEUTS® (tablets for mucosal absorption CIBA) whenever this hormone is indicated: in males—climacteric, impotence, angina pectoris; in females—menopause, dysmenorrhea, functional uterine bleeding; in both—for anabolic effects in cachectic states and growth failure. Supplied: Lingueuts, 5 and 10 mg.

C I B A

## NEWS AND NOTES

—Continued from page 194a

patient find a "new and absorbing interest."

### **Fear Called Chief Deterrent to Heart Disease Recovery**

Eliminating the patient's fear is the biggest problem faced by a general practitioner trying to help a heart disease victim recover, according to a report in a recent issue of the *Journal of the American Medical Association*.

The article, by Drs. Bryan Williams, Dallas; and Paul D. White, Boston; Howard A. Rusk, New York City, and Phillip R. Lee, Palo Alto, Calif., shows the results of a survey among 40 members of the American Academy of Gen-

eral Practice from widely scattered areas of the United States.

The solution to the problem of eliminating fear and misinformation about heart disease among patients and their families lies in education, the doctors thought. The physician, the patient, and the family should know about the more optimistic aspects of heart disease, the report said.

After the medical needs have been met, the doctors thought an unhurried explanation of the heart patient's illness is the most important step in returning such patients to an active and useful life.

The general practitioner believed that the second biggest problem they face in treating heart disease patients is the personal economic problem faced by such a patient.

unique  
**3** dimensional  
nutritional protection  
for every age  
group

- 1 bioflavonoids**  
exclusive water-soluble  
citrus bioflavonoid complex  
(as provided in C.V.P.)
- 2 vitamins**  
all the available  
important factors
- 3 minerals**  
all essential  
prime and trace  
minerals

"This reflects the awareness on the part of the family physician of the potentially devastating effects of the heart disease on the patient's ability to earn a living," the report said.

Seven of the 40 doctors surveyed felt the need for increased availability of facilities to help cardiacs find suitable jobs. The lack of such facilities in less populated areas was apparent from the responses to this question.

#### **A.M.A. Committee Warns All Fevers Aren't Flu**

The American Medical Association's special committee on influenza recently warned against attributing all flu-like symptoms to Asian influenza.

In its first comprehensive report to physicians on Asian influenza, the committee quoted an Army physician as

saying, "All that fevers is not flu." When a disease is widespread, there is a tendency to attribute the symptoms of most patients to the new disease. Physicians particularly must be aware of this fact, the report said.

Only by isolating the causative virus from the throat swabs of ill patients can a definite diagnosis of Asian flu be made.

In the report, the committee listed eight main conclusions about the disease and summarized the situation as it now stands. An accompanying editorial pointed out that "any change in the incidence of reported cases, or in the virulence of the virus, might warrant a completely new approach toward the disease."

As of now, the committee has reached these conclusions:

A superior shield against dietary deficiencies during pregnancy, in aged and debilitated patients, in restricted diets to help speed recovery in medical and surgical patients, BIVAM provides capillary-protectant citrus bioflavonoid complex and key nutrients essential to normal metabolism, anabolism, and optimal health.

**new...**

# **BIVAM**

**TABLETS**

SAMPLES of BIVAM and literature from

**u. s. vitamin corporation**

Arlington-Funk Laboratories, division  
250 East 43rd Street  
New York 17, N. Y.

Dose of 3 BIVAM tablets provides:	
Citrus Bioflavonoid Compound	100 mg.
Ascorbic Acid (C)	100 mg.
Calcium Lactate	1 Gm.
Ferrous Gluconate	100 mg.
Vitamin A	6000 U.S.P. Units
Vitamin D	600 U.S.P. Units
Thiamine Mononitrate (B1)	3 mg.
Riboflavin (B2)	3 mg.
Pyridoxine HCl (B6)	3 mg.
Vitamin B12 (cobalamin concentrate)	3 mcg.
Niacinamide	25 mg.
d. Calcium Pantothenate	5 mg.
Folic Acid	0.5 mg.
Menadione (K)	1 mg.
Vitamin E (dl. alpha tocopheryl acetate)	1 Int. Unit
Magnesium	3 mg.
Manganese	1 mg.
Copper	1 mg.
Zinc	1 mg.
Molybdenum	0.2 mg.
Iodine	0.1 mg.
Cobalt	0.1 mg.

Contains the many active bioflavonoid factors of the specially processed water-soluble bioflavonoid complex from citrus.

Bottles of 100, 300 and 1000 tablets.

## brighten the day



for the chronically ill...

**Ritalin**<sup>®</sup> hydrochloride  
(methyl-phenylacetate hydrochloride CIBA)

...mild antidepressant, unrelated to amphetamine, brightens outlook and renews vigor — with little or no effect on appetite or blood pressure.

C I B A SUMMIT, N. J. LEADER

## brighten the day



for depressed older patients...

**Ritalin**<sup>®</sup> hydrochloride  
(methyl-phenylacetate hydrochloride CIBA)

...mild antidepressant, unrelated to amphetamine, brightens outlook and renews vigor — with little or no effect on appetite or blood pressure.

C I B A SUMMIT, N. J. LEADER

—The probability of an epidemic of Asian influenza this fall or winter is great.

—The United States population has no natural immunity to this type of influenza.

—The most satisfactory vaccine possible has been developed.

—The supply of this vaccine should soon be adequate to protect essential national services.

—The vaccine is safe, except in patients with known allergy to eggs.

—The course of the disease is moderate in most patients, and there have been very few deaths reported due to the disease.

—It is possible, but not probable, that the disease will increase in virulence.

—Antibiotic and sulfonamide drugs are not effective in uncomplicated influenza cases. If secondary bacterial infection occurs as a complication, adequate treatment with these drugs should lessen the seriousness of the infections.

The committee pointed out that vaccine is now available in limited quantities. Much more will become available during the next few months, but until then physicians will have to decide how best to conserve the supply of vaccine.

### Blood Sludge Called Cause of Ear Disorders

A New York otolaryngologist believes that "sludging" of the blood, brought on by emotional difficulties, is involved in the development of several ear disorders.

Examination of the eyes' blood vessels, or sludge, circulating in the blood vessels has revealed clumps of red blood during acute, chronic, and progressive

—Continued on page 20a

MEDICAL TIMES



POST T&A

CONTROL  
BLEEDING\*  
PROMPTLY\*\*  
...SAFELY\*\*\*

\* "PREMARIN" INTRAVENOUS has been used effectively to control spontaneous bleeding, postoperative hemorrhage, and to help minimize blood loss during surgery.

\*\* Only one injection of "PREMARIN" INTRAVENOUS was required for rapid hemostasis in practically all cases of hemorrhage following tonsillectomy or adenoidectomy.<sup>1,2</sup>

\*\*\* Some 400,000 injections of "PREMARIN" INTRAVENOUS have been made to date without a single report of toxicity or production of thrombi.

"PREMARIN" INTRAVENOUS (conjugated estrogens, equine) is supplied in packages containing one "Secule"® providing 20 mg., and one 5 cc. vial sterile diluent with 0.5% phenol U.S.P.

**"PREMARIN"  
INTRAVENOUS**

the physiologic hemostat

1. Menger, H. C.: J.A.M.A. 159:546 (Oct. 8) 1955.
2. Published and unpublished case reports.

Ayerst

Ayerst Laboratories

New York, N. Y. • Montreal, Canada

In very special cases  
a very superior brandy...  
specify

★★★  
**HENNESSY**  
COGNAC BRANDY  
84 Proof | Schieffelin & Co., New York



You design it...  
We print it!

YOUR OWN PERSONALLY  
DESIGNED CASE HISTORY FORMS, AT  
JUST ABOUT STOCK FORM PRICES.

You design your form in rough  
pencil sketch—we refine it to a  
finished product.

Only we, the makers of famous  
"Histacount" products, have the  
know how and organization to  
render this service at such low  
prices.

You must be satisfied, or your  
money back—no obligation.

WRITE FOR DETAILS

**PROFESSIONAL  
PRINTING COMPANY, INC.**  
14 HISTACOUNT BUILDING  
NEW HYDE PARK, N. Y.

## NEWS AND NOTES

—Continued from page 198a

illness, in old age, after severe burns or injuries, and after emotional upheavals, Dr. Edmund Prince Fowler said.

The sludging seems to be a reaction to strain—either physical as in an injury or illness, or emotional. Dr. Fowler said in *Archives of Otolaryngology*.

He observed such sludge in various types of sudden and progressive deafness, in Meniere's disease, and in otosclerosis.

When blood cells aggregate in clumps, a shortage of oxygen develops in the area. This happens because the clumps clog the blood vessels and prevent the normal flow of blood. In addition, the cells' ability to take up and discharge oxygen is curtailed, since most of their surfaces are smothered. If the oxygen is cut off too long, damage to surrounding cells may result. This may be what happens in ear disorders, Dr. Fowler said.

He noted that most patients with otosclerosis who show sludging have histories of unresolved "frustrations," "abuses," "mental and bodily illness," and "emotional hypersensitivity."

Sometimes during the inactive periods of Meniere's disease and otosclerosis, little or no sludge may be seen, but it may be made to reappear or increase by even "apparently trivial emotional repercussions," Dr. Fowler said.

During attacks of head noises or dizziness sludging of the blood regularly occurs. It is also found after the sudden onset of deafness. This strongly suggests that sudden deafness is caused by an oxygen shortage in the ear's labyrinth due to circulation blockage.

Some drugs which stop blood coagulation help prevent sludging in the early stages. However, the first step in reducing sludging—and perhaps preventing ear disorders—is for the patient to adjust to his so-called "emotional instabilities," Dr. Fowler said. The patient must face facts and learn to stop "overwishes thinking" and to adapt to disappointments and frustrations.

"Aggravation causes aggregation," he said.

#### Grants to University of Illinois

Faculty members in a number of departments at the University of Illinois are the recipients of gifts and awards totaling \$151,523.86. While most of the projects will be carried out with funds from the US Public Health Service, gifts have been received from the National Multiple Sclerosis Society, Hoff-

mann-LaRoche Inc., American Cyanamid Co., Abbott Laboratories, Organon, Inc., the Tobacco Industry Research Committee, Dome Chemicals, Inc., and the Sherman-Williams Co.

#### Electric Shock's Effect on Heart Described

Touching a noninsulated high voltage electric line does not necessarily produce permanent—or even severe—damage to the heart.

A case illustrating one type of heart reaction to accidental electric shock and the excellent recovery following such an accident was reported in a recent issue of the *Journal of the American Medical Association* by Dr. William H. Wehrmacher, Northwestern University Medical School, Chicago.

A 52-year-old lineman was working astride a pole supporting high-tension electric wires, when his back, wet with

#### WIDE THERAPEUTIC RANGE

**WITH SAFETY.** Each patient has wide physiological and emotional tolerances to anticholinergics. Malcotran's wide dosage latitude facilitates regulation of your patient's dosage according to his need, not his tolerance.

Malcotran assures prompt arrest of gastro-intestinal motility—and reduction of gastric secretion.

## MALCOTRAN®

for peptic ulcer



PM-71

MALTBIE LABORATORIES DIVISION • WALLACE & TIERNAN INC.



sweat and covered only by a cotton shirt, touched a noninsulated 2,200-volt line. At the same time his right arm touched an insulated 110-volt line. The brief contact produced a buzzing sound heard by a nearby workman.

The lineman jerked away and finished the job. His arm and back were slightly burned. When seen by a doctor the next day, his heart was found to be functioning abnormally. The electrocardiograph revealed that the lower chambers were contracting irregularly and the upper chambers (atria) were fibrillating. Fibrillation is a condition in which the heart muscle fibers move individually and erratically.

Within five days the heart had returned naturally to a normal beat and the patient appeared to suffer no serious consequences. His job was changed

to one which did not require work with high-tension circuits or exertion. Two years later he showed no cardiac symptoms and could climb stairs as readily as ever.

In most instances of atrial fibrillation, the heart's rhythm returns to normal spontaneously or after treatment with drugs, usually without leaving any permanent damage, Dr. Wehrmacher said.

#### **World Rehabilitation Fund, Inc.**

Formation of a new voluntary organization to stimulate international understanding through sponsorship of international projects in rehabilitation of the physically handicapped was announced recently. The new organization is the World Rehabilitation Fund, Inc. of which Dr. Howard A. Rusk is the President. The objectives of the new organization are to: (a) speed independent self-assistance in under-developed areas, (b) to make the contribution of the United States to the welfare of the disabled throughout the world better understood, and (c) to develop international understanding and friendship.

The Fund hopes to achieve these objectives by grants to existing operating international agencies for special international rehabilitation projects. The Fund's first international scholarship to bring physicians and other rehabilitation workers to the United States for advanced study has been created with a grant to the Fund from the American President Lines. Under the scholarship, known as the American President Lines Fellowship, a physician from the Philippines will be given a minimum of one year's advanced training in physical medicine and rehabilitation at the Insti-

—Concluded on page 204a

**MEDICAL TIMES**

**Sulpho-lac**  
*The LOGICAL TREATMENT  
For ACNE*  
  
Samples on request.  
  
**KELGY LABORATORIES**  
160 E. 127th ST., NEW YORK 35, N. Y.

when you treat common bacterial infections...



a well patient back on the job



measures therapeutic success

# Pentids

Squibb 200,000 Unit Buffered Penicillin G Potassium Tablets

when an oral penicillin is indicated... prescribe Pentids

Six years experience by physicians in treating many millions of patients with Pentids confirm clinical effectiveness and safety. Excellent results are obtained with Pentids in many common bacterial infections with only 1 or 2 tablets t.i.d. Pentids may be taken without regard to meals. Pentids are economical... cost less than other penicillin salts.

**DOSE:** 1 or 2 tablets t.i.d. without regard to meals

**SUPPLY:** Bottles of 12, 100 and 500 tablets

**SQUIBB**



Squibb Quality—the Priceless Ingredient

#### *other Pentids products*

**NEW Pentids For Syrup:** Squibb Flavored Penicillin Powder: when prepared with 35 cc. of water, the preparation provides 60 cc. of fruit-flavored syrup, 200,000 units per teaspoonful (5 cc.).

**Pentids Capsules:** Squibb Penicillin G Potassium 200,000 Unit Capsules, bottles of 24, 100 and 500.

**Pentids Soluble Tablets:** Squibb Penicillin G Potassium Soluble Tablets - 200,000 units, vials of 12, bottles of 100.

**Pentid-Sulfas Tablets:** Squibb Penicillin with Triple Sulfas, bottles of 30, 100 and 500.

These formulations are given  $\frac{1}{2}$  hr. before meals or 2 hrs. after meals.

\*PENTIDS® IS A SQUIBB TRADEMARK

## brighten the day



for the confused older patient

### Ritalin

hydrochloride  
(methyl-phenidylacetate hydrochloride CIBA)

...mild antidepressant, unrelated to amphetamine, brightens outlook and renews vigor — with little or no effect on appetite or blood pressure.

C I B A SUMMIT, N.J.

## brighten the day



for the convalescent patient

### Ritalin

hydrochloride  
(methyl-phenidylacetate hydrochloride CIBA)

...mild antidepressant, unrelated to amphetamine, brightens outlook and renews vigor — with little or no effect on appetite or blood pressure.

C I B A SUMMIT, N.J.

## NEWS AND NOTES

—Concluded from page 202a

tute of Physical Medicine and Rehabilitation, New York University-Bellevue Medical Center. It is expected that the American President Lines Fellowship will provide a pattern which will be followed by many American corporations which are active in other nations.

### Retinoblastoma

Dr. Harold F. Falls, Associate Professor of Ophthalmology of the University of Michigan, has recently pointed out the dangers of retinoblastoma to present and future generations. With enucleation of the affected eye or eyes, the child has a reasonable chance of reaching maturity. However, children born to a parent having had retinoblastoma stand an equal chance of having the same disease themselves and of transmitting the condition by damaged genes. After several generations, a sharp increase in the incidence of retinoblastoma will have occurred. Parenthood in the case of these afflicted persons is a matter for grave consideration. The doctor adds his belief in a true balance of nature that man can only upset for a short while.

### Oxygen Deficiency in the Brain

Dr. F. E. Russell, Director of the Laboratory of Neurological Research of the College of Medical Evangelists, is undertaking a study to determine the effects of a deficiency of oxygen in the brain. It is his belief, also, that oxygen starvation may occur in newborn babies, or in cases of heart failure. The National Institutes of Health have placed an award of \$18,499 at the Doctor's disposal.

NEW  
TOPICAL  
DIMENSIONS

in

Antiinflammatory  
Antipruritic  
Antiallergic  
Bactericidal  
Fungicidal  
Protozoacidal

} action

INCORPORATED  
IN EXCLUSIVE  
ACID MANTLE  
VEHICLE

pH 5.0

**COR-TAR-QUIN™**

ACID MANTLE® • hydrocortisone • stainless tar • diiodohydroxyquinoline

In subacute and chronic dermatoses, "especially where an inflammatory reaction was accompanied by increased scaling and lichenification with secondary infection such as is seen in seborrheic dermatitis, atopic dermatitis, contact dermatitis, and neurodermatitis."

—Rein, C. R., and Fleischmajer, R. Personal Communication.



Sig: Apply b. i. d.  
½ oz., 1 oz., 2 oz., & 4 oz. tubes  
either 0.5% or 1.0% hydrocortisone.



**DOME** Chemicals Inc.

109 WEST 64 ST., NEW YORK 23, N.Y.

In Canada: 2765 Boles Rd., Montreal, P.Q.

## CLASSIFIED ADVERTISEMENTS

Advertisements under the headings listed are published without charge for those physicians whose names appear in the MEDICAL TIMES mailing list of selected general practitioners. To all others the rate is \$3.50 per insertion for 30 words or less; additional words 10c each.

### WANTED

Assistants  
Physicians  
Locations  
Equipment

### FOR SALE

Books  
Equipment  
Practices  
MISCELLANEOUS

CLASSIFIED ADVERTISING FORMS CLOSE  
15th of PRECEDING MONTH. If Box Number  
is desired all inquiries will be forwarded promptly.  
Classified Dept., MEDICAL TIMES, 1447 North-  
ern Boulevard, Manhasset, L. I., N. Y.

### DRUGS FOR SALE

BELLABULGARA TABLETS — Stabilized and Standardized Bulgarian Cane famous for successful treatment of Post-Encephalitic Parkinsonism — Sequela of Sleeping Sickness — Encephalitic Lethargica. Literature available on request. NAKASHEFF, Harbor Pharmacy, New York Avenue, Halesite, N. Y. PHONE Hamilton 7-9304.

### MEDICAL TIMES

Offers its readers a free  
Classified Advertising Service

## Need an Associate?

Do you have some equipment you would like to sell? Like to rent office space? You can use the classified columns of MEDICAL TIMES free of charge, if your name appears on the MEDICAL TIMES monthly mailing list of selected General Practitioners.

So, if you need an assistant, want to change location, want to buy or sell equipment, etc., just jot down your ad and send it to the address below and MEDICAL TIMES will run it in the first available issue.

### Department C

### MEDICAL TIMES

1447 Northern Blvd., Manhasset, N. Y.

when anxiety and tension "erupts" in the G. I. tract...

# IN DUODENAL ULCER



# PATHIBAMATE\*

Meprobamate with PATHILON® Lederle

Combines Meprobamate (400 mg.) the most widely prescribed tranquilizer . . . helps control the "emotional overlay" of duodenal ulcer — without fear of barbiturate loginess, hangover or habituation . . . with PATHILON (25 mg.) the anticholinergic noted for its extremely low toxicity and high effectiveness in the treatment of many G. I. disorders.

Dosage: 1 tablet t.i.d. at mealtime. 2 tablets at bedtime. Supplied: Bottles of 100, 1,000.



\*Trademark

® Registered Trademark for Tridihexethyl Iodide Lederle

LEDERLE LABORATORIES DIVISION, AMERICAN CYANAMID COMPANY, PEARL RIVER, NEW YORK



to quiet  
the cough  
and calm  
the patient ...

Your modern cough prescription

Expectorant action

Antihistaminic action

Sedative action

Topical anesthetic action



This advertisement conforms to the Code for Advertising of the Physicians' Council for Information on Child Health.

# PHENERGAN® EXPECTORANT

Promethazine Expectorant

With Codeine

Plain (without Codeine)



Philadelphia 1, Pa.

# MEDICAL TIMES, JANUARY, 1958

## Advertisers' Index

Abbott Laboratories (Nembutal)	94a	(Flexion) (Syndrox)	15a
American Ferment Co. (Carad and Bile Salts Tablets)	127a	(Cathozole) (Neo-Hydralazine Nasal)	17a 19a
Ames Co. Inc. (Aminex) (Clinitek) (Oechalin)	182a	(Sunitine) (Sulfadiazine)	142a, 143a Cover 4
Appleton-Century-Crofts (Medical Books)	129a	Metabol-Aid (Metabol-Aid)	76a, 77a
Armor Laboratories, The (Arofase)	124a	Nepera Laboratories (Biomycin Ophthalmic) (Chelare) (Mandé amine)	16a 42a 111a
Aschroft & Co., Inc., B. F. (Cortisone- <i>R</i> Tablets)	183a	Nestle's Pharmaceutical Co. (HVC)	178a
Ayerst Laboratories (Beminal Forte) (Colthera) (Premarin) (Theruhatin-S.A.)	155a	Organon, Inc. (Wigraine)	Cover 3
Bard-Parker Co., Inc. (Chlorophenyl)	36a, 37a	Ortho Pharmaceutical Corp. (Triple Sulfa Cream)	80a
Borden Company (Milk-Soy)	109a	Parke-Davis & Co. (Midol) (Myadec) (Natahee)	25a, 26a, 27a 159a, 186a 60a, 81a
Brewer & Co., Inc. (Anchor) (Sus-Phrine)	128a	Pet Milk Co. (Evaporated Milk)	44a
Brown Laboratories (Azotrex) (Tetrex)	152a, 153a	Pfizer Laboratories, Division of Chas. Pfizer (Tetraflex V) (Tetrazen V)	40a 177a
Bristol-Myers Co. (Butenirin)	between pages 66a and 67a	Pitman-Moore & Co., Division of Allied Laboratories, Inc. (Arobon) (Intromycin)	88a, 89a 89a
(Theradan)	65	(Novahistine-LP) (Novahistine-DN)	88a 152a, 153a
Buntington's, Inc. (Lanolin)	187a	(Novahistine with Penicillin)	134a 131a
Burroughs Wellcome & Co. Inc. (Polysporin)	147a	Professional Printing Co. (Printing Needs)	200a
Burton, Parsons & Co. (L.A. Formula)	146a	Research Supplies (Glukor)	162a
Chatham Pharmaceuticals, Inc. (Kosamin)	96a	Riker Laboratories, Inc. (Digidol) (Medilac EPI & ISO) (Tazidol)	189a 179a 52a
Ciba Pharmaceutical Products (Doriden) (Metandren-Linguesta) (Regitine) (Ritalin)	3a 18a, 195a	Robins Co., Inc., A. H. (Ambar) (Dimefane) (Phenaphen Plus)	45a 166a, 167a 150a
(Sorpassi)	184a, 176a, 174a, 198a, 294a	(Robutusin)	68a
Cole Chemical Co. (Ivanol) (Metacol)	73a	Roche Laboratories, Division of Hoffmann-LaRoche Inc. (Aciclovir) (Ildar) (Marsilid) (Noludar) (Remilar-CF) (Roniacol) (Vi-Penta)	Cover 2 96a 91a 193a 115a 99a 41a 84a
Eaton Laboratories, Inc. (Furacin Soluble Dressing) (Furadantin) (Tricloran)	22a 72a	Roussel Uclaf, J. B. (Vitalex) Schieffelin & Co. (Hennessey Cognac Brandy)	138a 200a
Endo Laboratories, Inc. (Hycedan)	136a, 137a	Searle & Co., G. D. (Dartal) (Pertussin)	20a, 21a
Fleet Co., Inc., C. B. (Clysmathane)	205a	Searle & Kade, Division of Chesebrough-Pond's, Inc. (Sherman Laboratories (Protamide)	138a
Fouger & Co., Inc., E. (Dianol)	38a	Sheld Laboratories (Rimobol)	135a
Geigy Pharmaceuticals (Butazolidin) (Prolidin)	194a	Smith, C. O. Martin H. (Dopaspirin)	144a
Hertz & Co., H. (Investments)	73a	Smith, Kline & French Laboratories (Compassine)	163a
Hubert Laboratories, Inc. (Numofoline)	101a	Spirit & Co., Inc. (Lipan)	19a
Hoffmann-LaRoche Co. (Koronez)	82a	Squibb & Sons, E. R. Division of Otin-Mathieson (Pentids) (Raudida)	203a 12a
Homemakers Products Corp. (Diaparene)	66a	(Suzicin)	73a
Irwin, Neisler & Co. (Cardal) (Catalin)	190a	Strasburgh Co., R. J. (Biphenamine)	184a 185a
Johnson & Johnson Baby Products Division (Liquigrip)	158a	Sunkist Growers (Bioflavonoids)	54a
Kellogg Laboratories (Sulpho- <i>lac</i> )	175a	Thomas, Chas. C. (Medical Books)	22a
Kinney & Co., Inc. (Emetrol)	202a	U.S. Army Corp. (Bilavam)	196a, 197a
Knoll Pharmaceutical Co. (Diamid)	113a	Upjohn Co. (Medrol)	141a
Lakeside Laboratories, Inc. (Tridal)	65a	Waddell and Reed, Inc. (Investments)	100a
Lederle Laboratories, Division of American Cyanamid Co. (Achromidin) (Achromycin-V) (Achromycin V) (Aristocort) (Diamox)	8a 47a 92a 93a 35a, 58a, 59a	Wallace Laboratories (Megrofabs) (Milipath) (Miltown)	48a 78a, 71a between pages 34a and 35a
(Favlin)	115a	Warner-Chilcott Laboratories (Cetophen) (Methimazole)	31a 4a
(Gevral-T)	172a, 173a	(Pariside) (Peritrate) (Piestran)	209a 85a 161a
(Pathibamate)	14a	(Pyridium)	51a
(Pathilene)	151a	Westwood Pharmaceuticals, Division of Foster-Milburn Co. (Fostex)	30a
Levy & Co., Inc., Thomas (Baume Bongus)	210a	White Laboratories, Inc. (Cetophen Oint. Elixir) (Vitamin A & D Ointment)	31a 28a 126a
Lloyd Brothers, Inc. (Rencovite)	165a	Wyeth Laboratories (Aludrox) (Ansolyse)	67a 41a
Mathie Laboratories, Division of Wallace & Tiernan, Inc. (Chelan V)	165a	(Pen-Vee-Cidin) (Pen-Vee Oral)	4a 117a
(Maleotran)	50a	(Pen-Vee-Buffas)	17a
McNeil Laboratories, Inc. (Butisel Sodium)	160a, 178a, 201a	(Pen-Vee Expectorant)	207a
(Massengill Powder)	between pages 146a and 147a	(Sparine)	148a
(Obedrin)	between pages 82a and 83a	(S-M-A)	157a
(Wynands HC)		(Sulfose)	31a
(Wynsels Equanil)		(Wynands HC)	191a
		(Wynsels Equanil)	35a



## Control the major symptoms

**In Parkinsonism** Parsidol has proved outstandingly effective for controlling tremor and muscular rigidity, the principal impairments in this disease.<sup>1,2</sup>

With Parsidol most patients show rapid, even dramatic improvement—both in major symptoms and in gait, posture, balance and speech. Side effects are minimal. Parsidol is compatible with all other antiparkinsonian drugs and its effectiveness may even be increased in combination or rotation with such preparations as atropine and dextroamphetamine.<sup>3</sup> Parsidol improves the patient's emotional perspective, promotes a more optimistic outlook as physical coordination and dexterity return.

Most patients can be controlled with a maintenance dosage of 50 mg. four times daily. However, more severe cases may require up to 600 mg. daily, a dosage level ordinarily well tolerated.

**References:** 1. Doshay, L. J.; Constable, K. and Agate, F. J., Jr.: J.A.M.A. 160:348 (Feb.) 1956. 2. Berris, H.: J.-Lancet 74:245 (July) 1954. 3. Timberlake, W. H. and Schwab, R. S.: N. Eng. J. Med. 247:98 (July 17) 1952.

# PARSIDOL®

*hydrochloride*

**WARNER - CHILCOTT**

*Above and right are action pictures, taken from a Warner-Chilcott film study, of a parkinsonian patient before and after initiation of Parsidol therapy for major tremor.*





High-concentration topical salicylate-menthol therapy (BEN-GAY) offers safe, penetrating relief of painful joints and muscles resulting from overexertion.

#### New, objective evidence:

A double-blind study<sup>1</sup> has reaffirmed the exceptional efficacy and safety of conservative, local treatment of chronic rheumatic disorders with BEN-GAY® (BAUME BENGUÉ), a high-concentration salicylate-menthol compound.

The local and systemic effects of BEN-GAY were evaluated by entirely objective methods in 211 subjects of both sexes suffering from various types of chronic arthritis, bursitis, neuralgia, myalgia and lumbago. Changes in range of joint motion were determined by goniometer and by flexion. Topical application of BEN-GAY measurably improved articular function in 94% when physical therapy was also used, and in 61% without adjunctive treatment. Efficient absorption of salicylate through the skin was indicated by an average urinary excretion of 15 mg. in 24 hours. No ill effects were reported or observed.

## Benefits of Topical Salicylate in chronic rheumatic disease

Menthol-induced hyperemia plus high local concentration of salicylate has been recently rediscovered as one of the safest and most promptly effective remedies for rheumatoid discomfort due to exposure.



This controlled study offers new evidence of the efficacy and safety of local treatment of chronic rheumatic disease with BEN-GAY, one of the safest and most reliable formulae at the physician's disposal. BEN-GAY is available in two strengths, *Regular* and *Children's*. THOS. LEEMING & CO., INC., 155 East 44th St., New York 17, N.Y.

<sup>1</sup>Brusch, C.A., et al.: Md. State Med. J., 5:36, 1956.

More efficient salicylate penetration of treated area and quicker relief of pain is now made possible by water-washable, new GREASELESS-STAINLESS BEN-GAY.

# Vascular headache?



# WIGRAINE®

TABLETS AND SUPPOSITORIES

When taken at the first indication of symptoms, Wigraine tablets and suppositories relieve vascular headaches (e.g., *migraine*) completely. The uncoated Wigraine tablet disintegrates quickly, acts promptly. Wigraine suppositories are useful for those patients who experience nausea and vomiting as an early symptom.

Wigraine combines ergotamine tartrate and caffeine to relieve vascular head pain by vasoconstriction; belladonna alkaloids' antispasmodic action for nausea and vomiting; and the analgesic action of acetophenetidin for residual occipital muscle pain.

**Formula:** Each Wigraine tablet and suppository contains 1 mg. ergotamine tartrate, 100 mg. caffeine, 0.1 mg. 1-belladonna alkaloids,\* and 130 mg. acetophenetidin.

**Supplied:** *Wigraine Tablets*, individually foil-stripped and packaged in boxes of 20 and 100. *Wigraine Suppositories*, individually double-wrapped in clear plastic boxes of 12. Send for complete descriptive literature.

*Organon Inc.*  
ORANGE, N. J.

\*87.5% hyoscyamine, 12.5% atropine, as sulfates



**Prognosis: Smooth recovery from bowel surgery**

# **SULFASUXIDINE**

SUCCINYSULFATHIAZOLE

Preoperatively, SULFASUXIDINE prepared this patient for intestinal surgery — reduced enteric coliforms 95-99.9 per cent... minimized danger of contamination and secondary infection.

Postoperatively, SULFASUXIDINE will continue to suppress bacterial growth; lessen danger of peritonitis. Flatulence will be diminished... tissue repair progresses satisfactorily.

SULFASUXIDINE confines its bacteriostatic potential to the gut — absorption is very low — systemic reaction is rare.

As adjunctive therapy SULFASUXIDINE has demonstrated great value in acute and chronic colitis.



**MERCK SHARP & DOHME**

DIVISION OF MERCK & CO., INC., PHILADELPHIA 1, PA.